AN EVALUATION OF NEEDS, DESIGN, IMPLEMENTATION, AND OUTCOMES
OF
DEVELOPMENT AND LEARNING COURSE
ENRICHED WITH CRITICAL THINKING BASED INSTRUCTION

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Approval of the Graduate School of Social Sciences

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ABSTRACT

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This study aimed to evaluate the development process of Development and Learning course according to critical thinking based instruction in the Faculty of Commerce and Tourism Education at Gazi University by using Stufflebeam's Context, Input, Process, and Product evaluation model.

Data were collected from various sources through qualitative and quantitative methods such as questionnaires, individual and focus group interviews, student journals, achievement test, and California Critical Thinking Disposition Inventory (CCTDI). The context evaluation results showed that there were problems in the attainment of course objectives and in the application of the effective instructional strategies for learning and improving thinking skills. Thereupon, at the input evaluation stage, the course was redesigned according to critical thinking based instruction. Pretest-posttest experimental study was carried out while implementing the redesigned course. Concerning the process evaluation, student journals pointed out that while critical thinking based instruction was effective on learning, thinking and metacognitive skills, students experienced some difficulties. Regarding the product evaluation, according to achievement pre-posttest and retention test results and CCTDI pre-posttest results, students in both groups showed a significant progress within a semester. However, there was no difference between treatment and control groups. On the other hand, in the focus groups interviews, the students from

the treatment groups expressed the contributions of the course to their teaching and thinking skills, understanding and participation. In conclusion, though quantitative data addressed that critical thinking based instruction did not create difference compared to the traditional instruction, qualitative data delineated positive effects of this approach.

ÖZ

ELEŞTİREL DÜŞÜNMEYE DAYALI ÖĞRETİM İLE ZENGİNLEŞTİRİLEN GELİŞİM VE ÖĞRENME DERSİNİN İHTİYAÇLARININ, TASARIMININ, UYGULAMASININ VE ÇIKTILARININ BİR DEĞERLENDİRMESİ

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Bu çalışmanın amacı, Gazi Üniversitesi Ticaret ve Turizm Eğitim Fakültesi'nde okutulan Gelişim ve Öğrenme dersinin, eleştirel düşünmeye dayalı öğretime göre geliştirilmesi sürecinin Stufflebeam'in Çevre, Girdi, Süreç, ve Çıktı modeli kulllanılarak değerlendirmektir.

Veriler, anket, bireysel ve grupla görüşme, öğrenci günlükleri, başarı testi ve Kaliforniya Eleştirel Düşünme Eğilimi Envanteri (CCTDI) gibi nitel ve nicel yöntemlerle çeşitli kaynaklardan toplanmıştır. Süreç değerlendirmesi sonuçları, dersin hedeflerinin kazanımında problemler olduğunu ve öğrenme ve düşünme becerilerinin geliştirilmesi için etkili olan öğretim stratejilerinin çoğunun derste hiç uygulanmadığını yada nadiren uygulandığını göstermiştir. Girdi değerlendirmesi aşamasında, ders çevre değerlendirmesi sonuçları dikkate alınarak eleştirel düşünmeye dayalı öğretime göre yeniden tasarlanmıştır. Bu dersin uygulanması aşamasında deneysel bir çalışma gerçekleştirilmiştir. Süreç değerlendirmesine ilişkin olarak, deney grubunda her hafta doldurulan öğrenci günlükleri, bu dersin öğrenme, düşünme ve metabiliş beceriler üzerinde etkili olmasına rağmen, öğrencilerin bazı sorunlar da yaşadığına işaret etmiştir. Çıktı değerlendirmesi ile ilgili olarak, başarı testinin ön-sontest ve kalıcılık testi sonuçları ile CCTDI ön-sontest sonuçları, deney ve kontrol grubundaki öğrencilerin dönem içinde iyi bir ilerleme gösterdiklerini ortaya çıkarmıştır. Fakat, bu sonuç, deney ve kontrol grupları arasında istatistiksel

açıdan anlamlı farklılıklara sebep olmamıştır. Diğer taraftan, odak grup görüşmelerinde deney grubundaki öğrenciler, bu dersin öğretim ve düşünme becerileri, anlama ve derse katılım açısından kendilerine katkı sağladığını ifade etmişlerdir. Sonuç olarak, başarı testi ve CCTDI ölçeklerinden elde edilen nicel veriler eleştirel düşünmeye dayalı öğretimin geleneksel öğretime göre farklılık yaratmadığına işaret ederken, öğrenci günlüklerinden ve görüşmelerden elde edilen nitel bilgiler bu yaklaşımının olumlu etkilerini ortaya çıkarmıştır.

Anahtar kelimeler: Eleştirel düşünme, eleştirel düşünmeye dayalı öğretim, program/ders değerlendirme, ders tasarımı, öğretmen eğitimi

To My Mother,

My Baby,

and

My Husband

ACKNOWLEDGEMENTS

TABLE OF CONTENTS

LIST OF TABLES

TABLES

LIST OF FIGURES

FIGURES

LIST OF ABBREVIATIONS

CIPP=Context, Input, Process, Product Evaluation Model

CHE=Council of Higher Education

MONE=Ministry of National Education

VTE=Vocational and Technical Education

MVET=Modernization of Vocational Education and Training in Turkey Project

CoRT=Cognitive Research Trust

IE=Instrumental Enrichment

CCTST=California Critical Thinking Skills Test

CCTDI=California Critical Thinking Disposition Inventory

W-GCTA=Watson-Glaser Critical Thinking Appraisal

E-WCTET=Ennis-Weir Critical Thinking Essay Test

CGPA=Cumulative Grade Point Average

KPSS=Kamu Personeli Seçme Sınavı (Public Personnel Selection Exam)

CHAPTER I

INTRODUCTION

1.1. Background to the Study

This is a course evaluation study in which the needs, design, implementation and outcomes of the "Development and Learning" course enriched with critical thinking based instruction within the teacher education program in the Faculty of Commerce and Tourism Education at Gazi University were evaluated by using Stufflebeam's Context, Input, Process, and Product (CIPP) evaluation model.

There are various and essential pedagogical courses in teacher education programs which aim to develop teaching skills of prospective teachers and to educate qualified teachers. To achieve this aim, these courses should be given effectively and the quality of instruction should be ensured. Hence, for the purpose of raising the quality in teacher education for general, vocational and technical education, the Turkish National Committee in Teacher Education was established in 1997. Teacher education programs in Turkey were reconstructed and the reconstructed programs have started to be carried out since 1998-1999 academic year by the Council of Higher Education (CHE) (CHE, n.d.a). At the same time, attempts toward providing accreditation in teacher education have been started; in this respect, an accreditation program was developed and the teacher education standards and teacher competencies in Turkey were determined (CHE, n.d.b).

Besides these endeavors regarding the improvement of the quality of teacher education, there have been attempts to identify teacher competencies by the Ministry of National Education (MONE) since 1995 (Karaçalı, 2004). Lastly, within the scope of the Support to Basic Education Project, the teacher competencies were redetermined through a number of workshops carried out by the MONE General Directory of Teacher Training and Education in 2004-2005. The identified six main competency fields were Personal and Professional Values-Professional

Development; Recognition of Student; Teaching-Learning Process; Follow-up and Evaluation of Learning and Development; School-Parent-Community Relationship; and Program and Content Knowledge (Öğretmen Yetiştirme ve Eğitimi Genel Müdürlüğü, 2006). The main purpose of the determination of these competencies is to adjust teacher education programs so as to train prospective teachers equipped with these competencies. One of the pedagogical courses in the programs that are supposed to serve this purpose is Development and Learning course, whose title was changed in the Teacher Education Faculties for Elementary Schools as Educational Psychology course in 2006-2007 (CHE, n.d.c). Indeed, within these competency fields, the inclusion of the *Recognition of Student* domain comprising competencies regarding knowledge and skills for students' learning and development addresses the importance of this course, because this course aims to provide educational opportunities toward the attainment of these competencies required in the subsequent courses, in the teaching practice, and in the teaching profession.

Concerning Development and Learning course, Yıldırım, Güneri, and Sümer (2002) point out its necessity by counting these skills and knowledge about students' learning and development among effective teaching characteristics that a good teacher should possess. In addition, Senemoğlu (2001) indicates that since educational environment and teaching-learning process have essential roles in learning, it is very crucial to have knowledge of development and learning not just for teaching but also for curriculum development, instructional design, implementation and assessment. Furthermore, Peterson, Clark, and Dickson (1990) assert that whatever programs or designs emerge as a result of the improvement in teacher education programs toward meeting the 21st century's challenges, each will include a course in relation to human learning and development indispensably. For these reasons, this course, as a compulsory part of teacher education programs, is to be taught effectively so as to raise qualified prospective teachers.

In this respect, critical thinking based instruction; that is, structuring the course by means of activities and strategies based on critical thinking, has been stressed for effective learning but at the same time for improving critical thinking skills. In other words, as stated by Thompson (1995), integrating critical thinking into subject matter is seen as a means for developing clear, precise thinking skills and understanding the nature of knowledge. Improving student thinking is important not

2

only for mastering a given subject matter but also for coping with demands of the current challenging century (Beyer, 1988a; Burden, 1998; Halpern, 1999; Maclure, 1991; McTighe & Schollenberger, 1991). Thus, teaching thinking skills such as critical and creative thinking skills has been appraised for years in related research, articles and books (e.g., Baumfield, 2006; Beyer, 1988a, 1988b, 1991, 1998; Burden & Williams, 1998; Costa, 1991a; Eggen & Kauchak, 2001; Grant, 1988; Johnson, 2000; Kincheloe & Weil, 2004; Maclure & Davies, 1991; Moseley, Baumfield, Elliot, Gregson, Higgings, Miller, & Newton, 2005;. Moseley, Elliot, Gregson & Higgins, 2005; Nisbet, 1993; Paul, Binker, Martin, & Adamson, 1989; Şahinel, 2005; Zohar, 2006; Zohar & Dori, 2003; Zohar & Schwartzer, 2005). In essence, teaching thinking has gained more importance along with a transition from subject-centered instruction to learner-centered instruction because learner-centered instruction focuses on enhancing the learning process by requiring students to struggle with ideas, facts, and opinions instead of memorizing (Halonen, Brown-Anderson & McKeachie, 2002; Raths, Jonas, Rothstein, & Wassermann, 1967). In addition, as stated by McKendree, Small, Stenning, and Conlon (2002),

> Curriculum design throughout school programmes reflects the growing belief in the importance of learners' developing thinking skills, not only as a tool with which to maximise potential in individual subjects but also as a generic skill to be learned in classes and transferred from one to the other in all directions. (p. 57)

While there are various thinking skills of which some are interrelated and some sequential, critical thinking especially comes into prominence because of being a comprehensive and sophisticated higher order thinking skill. Semerci (2003) stresses that critical thinking allows learning subject matter better, transferring it to new situations, and developing an evaluation skill. Through education system, students are overwhelmed by much information. However, being full of information or absorbing it is useless for effective learning; as said by Hughes and Lavery (2004), a person should be able to use it in his/her thinking to recognize and assess its implications and consequences and this can be achieved via critical thinking. Likewise, Şahinel (2005) asserts that instead of providing rigid behaviors and imposing information to be memorized, the democratic education system entails a schooling that provides educational opportunities for critical and creative thinking

3

based learning so as to educate students who are able to interpret what is learned and who are unbiased in thinking.

As well as learning effectively, in order for coping with the demands of life, critical thinking is considered as a major skill that should be gained at any stage of schooling. In this regard, McCallister (2004) emphasizes on the importance of training critical thinkers in order to meet the expectations of the changing society as a result of information management by computers, high speed communication, and rapid development of knowledge. Because, within today's contemporary life, information technologies exposing a variety of information require persons who criticize, evaluate, and select information rather than passively receive it (Şahinel, 2005). In this point, Hughes and Lavery (2004) stress the necessity of critical thinking for intellectual self-respect that prevents persons from being "in danger of becoming slaves to the ideas and values of others due to our own ignorance" (p. 25).

Additionally, Şahinel (2005) emphasizes its necessity for good citizenship and healthy democracy by stating that all citizens should be able to think critically in order to understand and interpret actual social problems and to take part in the solution process. In fact, a prerequisite of a healthy democracy is the public opinion that is formed by persons who can think critically, understand what they read or listen, and evaluate incidences as to their perspectives. Thinking skills are so widely stressed that a variety of work fields forces employers to hire persons who possess general thinking skills abilities as well as being experienced. In this sense, developing programs aiming to promote critical thinking among youth would raise students who have a realistic world view, who realize sophisticated views and multiple perspectives, who notice social and national problems and contribute to the solutions, who behave as critical observers, and who become advocates of democratic institutions and rights (Şahinel, 2005).

Because of these reasons, it has been counted among generic abilities or key skills that have been emphasized in the government papers such as those in the UK, Australia, New Zealand, North America (Pithers & Soden, 2000). In Turkey, the general purpose of the Turkish National Education, especially the second item, also addresses the importance of developing critical thinking skills in education.

The general purpose of the Turkish National Education is to raise all Turkish citizens;

(1) as individuals who are committed to Atatürk's principles, the revolution and the Atatürk Nationalism defined in the Constitution, who assimilate, protect, develop the national, human, moral and cultural values of the Turkish nation, who love and continuously try to raise their family, country and nation, who are aware of their duties and responsibilities toward the Turkish Republic, a democratic, secular and social state of law based on human rights and the basic principles defined at the beginning of the Constitution and for whom these duties have become a habit;

(2) as individuals who have a balanced and healthy personality and character, who are developed in terms of body, mind, moral, spirit and emotions, free and with scientific thinking abilities and a wide worldview, who respect human rights, who value personality and enterprise, who are responsible toward society, who are constructive, creative and productive.

(3) in line with their own interests and abilities, to prepare them for life by helping them to acquire the required knowledge, skills, behavior and cooperative working habits, and to ensure they have a profession which will make them happy and contribute to the happiness of society.(MONE, 2002)

All these discussions lead us to a fact that the essentiality of critical thinking skill rises much more in the teacher education because prospective teachers are supposed to teach or implement this skill in their classes and it is not possible to achieve this mission without learning what to and how to teach it. Therefore, critical thinking skills should be integrated into all aspects of teacher education programs so as to foster critical thinking skills of prospective teachers and teach them about teaching methods and strategies. Thereby, they can be models of effective thinking strategies and teach critical thinking skills to their own students (Critical Thinking Skills and Teacher Education, 1988; Türnüklü & Yeşildere, 2005).

In this respect, Peterson, Kromrey, Borg, and Lewis (1990), in their study, found that teachers, who are educated in higher order thinking skills such as reasoning, problem solving, and critical thinking, showed better performance in teaching these skills compared to their pre-training performances. They stress that in order for significant effect, providing consciousness is not adequate but training in higher order thinking should be ensured in both pre-service and in-service teacher education programs.

Indeed, Paul, Elder, and Bartell (1997) best delineate the importance of critical thinking in teacher education in their study entitled "California Teacher

Preparation for Instruction in Critical Thinking: Research Findings and Policy Recommendations".

> There can be no more important role than the shaping of the thinking and teaching practices of future teachers. This shaping has consequences for many years to come in its effect on the minds and lives of countless students. Furthermore, there can be no more important influence to have on prospective teachers than that of aiding them to discover the potential power of their own minds to think with skill, insight and discipline. Only those teachers with good critical thinking and problem-solving abilities will be able to educate a generation of critical thinkers and problem solvers. (p. 1)

As for Turkey, in the XVI. National Education Council whose main issue was vocational and technical education, it was stressed that the relevant teacher education faculties should aim at training teachers who can think critically and scientific instead of memorizing and who can investigate, question, analyze, synthesize and evaluate (Talim ve Terbiye Kurulu, 1999). Then, in the XVII. National Education Council, it was pointed out that the education faculties in general should be revised so as to promote prospective teachers' thinking skills (Talim ve Terbiye Kurulu, 2006). In addition, "improving and using critical thinking" was determined as one of the abovementioned teacher competencies that should be gained during the teacher education (Öğretmen Yetiştirme ve Eğitimi Genel Müdürlüğü, 2006). Briefly, these policies and actions have pointed out the requirement of designing teacher education programs and courses so as to promote thinking skills of prospective teachers as today's students and as the future's teachers.

Designing a course/program based on a new strategy is important for improvement and quality. Yet, more essential issue that actually leads to the improvement and quality is a systematic evaluation of that course before being designed, and during and after being implemented because results of educational evaluation underline the points that need to be modified in order to raise the quality of the educational opportunities for learners (Saylor, Alexander, & Lewis, 1981). Thus, if the main concern is the quality of the education, a systematic evaluation should be carried out as an indispensable step for the improvement of educational institutions. In this regard, the following statement supports the necessity of systematic evaluation for improvement.

> There is a need to plan and carry out school improvements in a systematic way that includes (a) identifying needs, (b) selecting best strategies from

among known alternatives, (c) monitoring changes as they occur, and (d) measuring the impact of these changes. Only through this process can educators minimize the chance of misdirected or inconsequential changes and justify expenditures associated with beneficial changes. (Stufflebeam & Shinkfield, 1985, as cited in Worthen & Sanders, 1987, p. 6)

While overall aim of evaluation is basically to improve and strengthen the program, product, project, process, objective or curriculum to raise the quality of education (Worthen & Sanders, 1987; Stufflebeam, 2000, 2003), several reasons and purposes behind evaluation have also been discussed by pioneers of this field.

Ornstein and Hunkins (1998) explain that evaluators have a question in their mind while carrying out curriculum evaluation. This question that they strive to find answers throughout evaluation process may be a question related to intrinsic value that addresses the appropriateness of the new curriculum; a question related to instrumental value that addresses whether what is planned will be implemented; a question related to comparative value that deals with whether the new program is better than the previous one; a question related to idealization value that is concerned with making the program better; or a question related to decision value that results in deciding whether to maintain, adjust or remove the new program.

Moreover, Worthen and Sanders (1987) point out that evaluation is generally conducted if impacts of a number of new theories would be tested, if educators are responsible for appraising the quality of the program, if external agencies wants reports on schools' progress for data based decision, if a cost benefit analysis of programs is required, or if impact of the educational practices would like to be ascertained.

In sum, current literature, report, and policies support the inclusion of critical thinking into programs at any grade level and at any subject field. On the other hand, in Turkey while thinking skills have been appraised in the national policies and programs (Öğretmen Yetiştirme ve Eğitimi Genel Müdürlüğü, 2006; Talim ve Terbiye Kurulu, 1999, 2004, 2006), in practice courses teaching thinking skills or integrating thinking skills into its subject matter have not been encountered widely in teacher education programs and this deficiency addresses the necessity of studies in this respect. Even though there have been studies about critical thinking based instruction, their scope were limited either to the determination of students' critical thinking level (e.g., Dayıoğlu, 2003; Kaya, 1997; Kürüm, 2002; Özdemir, 2005) or to

the impact of such courses on the course achievement or/and on the development of critical thinking skills or dispositions even if they are experimental studies. In other words, outcome evaluation has been emphasized in these experimental studies such as those carried out by Akınoğlu (2001), Deniz (2003), Gözgür (2003), and Özçınar (1996). Thus, studies including overall evaluation of such an instruction, needs and course design process are scarce. On the other hand, current research on critical thinking elicited that teacher education draw less attention and its worth for the enhancement of critical thinking and the dissemination of its teaching to all level of schooling has not been recognized as much as it has to be.

Therefore, an inquiry that incorporates critical thinking skills into a pedagogical course in teacher education, implements it and evaluates all processes systematically would contribute to the deficiency in literature and would shed light on the ways of educators and researchers who attempt to carry out similar studies. In the light of this perspective, in this study critical thinking skills were integrated into Development and Learning course subject, which has a valuable place in teacher education. Furthermore, this study was carried out not only for redesigning the course with critical thinking based instruction but also for evaluating the course before, during, and after it is redesigned. That is, needs, design, implementation and outcomes of Development and Learning course enriched with critical thinking based instruction were evaluated and a sequential, systematic and comprehensive evaluation process that serves the improvement of the instruction was undertaken. In this respect, the abovementioned quotation cited from Worthen and Sanders (1987) constituted a more understandable framework for this evaluation study which aimed (1) to assess needs; (2) to evaluate critical thinking teaching strategies and faculty resources so as to design the course toward meeting the needs; (3) to evaluate the redesigned course during its implementation process; and (4) to evaluate the outcomes of the redesigned course and compare with the outcomes of the course taught based on the ordinary instruction. Because of being best match to this framework, Stufflebeam's CIPP evaluation model allowing evaluation throughout these processes (Worthen & Sanders, 1987) was followed. In addition, in order to reveal rich information that would enlighten educators who aim to incorporate thinking skills into pedagogical courses and evaluate the effectiveness of any courses by means of this model, both qualitative and quantitative methods were used.

8

1.2. Purpose of the Study

The main purpose of the study is to evaluate needs, design, implementation and outcomes of "Development and Learning" course enriched with critical thinking based instruction in the Faculty of Commerce and Tourism Education at Gazi University by using Stufflebeam's CIPP evaluation model and to compare outcomes with those of traditional instruction. The research questions of the study are grouped under each component of the evaluation model.

Context Evaluation

1. The main research question for this component is "What aspects of Development and Learning course need to be improved?" The related questions are:

   1.1. What aspects of teacher education programs and Development and Learning course need to be improved according to the expert at MONE?

   1.2. What aspects of teacher education programs and Development and Learning course need to be improved according to the instructor who teaches pedagogical courses in the faculty?

   1.3. What aspects of the accounting teacher education program and pedagogical courses need to be improved according to the vice chair of the Department of Accounting Teacher Education?

   1.4. What are the needs regarding the objectives, content, teaching-learning process and assessment techniques of Development and Learning course according to the sophomore, junior and senior students who have already taken this course?

   1.5. What are the needs regarding the objectives, content, teaching-learning process and assessment techniques of Development and Learning course according to graduates who have been working as teachers?

Input Evaluation

2. The main question for this component is "how can Development and Learning course be designed according to critical thinking based instruction in the

direction of meeting instructional needs of the students?" The related questions are:

    2.1.   How can objectives of such a course be defined?

    2.2.   How can the content of such a course be organized?

    2.3.   What kind of teaching strategies can be used?

    2.4.   What kind of materials can be used?

    2.5.   How can students' achievement be assessed in such a course?

Process Evaluation

3.   The main research question for this component is "How well is this redesigned course being implemented from the students' points of view?" The related questions are:

    3.1.   What are the reactions of students towards the effectiveness of the implementation of the redesigned course?

    3.2.   Is there a need for revisions regarding the implementation of the redesigned course?

Product Evaluation

a.   The main research question for this component is "What is the impact of the redesigned course as compared to the existing one (traditional instruction)?" The related questions are:

    4.1.   Is there a significant time difference among the students' mean scores on the pre, post achievement tests and retention test after controlling their Cumulative Grade Point Average (CGPA)?

    4.2.   Is there a significant mean difference between the traditional classroom instruction (control group) and critical thinking based instruction (treatment group) in terms of the students' learning after controlling their CGPA?

    4.3.   Is there a significant interaction effect between time and groups in terms of the students' learning after controlling their CGPA?

    4.4.   Is there a significant time difference between the California Critical Thinking Disposition Inventory (CCTDI) pretest and posttest mean scores of the students?

4.5. Is there a significant mean difference between the control and treatment groups in terms of the students' critical thinking disposition?

4.6. Is there a significant interaction effect between time and groups in terms of the students' critical thinking disposition?

4.7. What are the opinions of the students about the impact of the traditional course and critical thinking based course?

1.3. Significance of the Study

The governments' and the MONE's recent national policies and projects that have been emphasizing on the strengthening vocational and technical education (VTE) entail raising the quality in teacher education programs for vocational and technical secondary schools (MONE, 2002). The Development Plans, particularly VIII. and IX. Development Plans for 2001-2005 and 2007-2013 years, addressed deficiencies and problems in VTE and so specified policies toward strengthening the VTE system because of its importance for the country's development (Devlet Planlama Teşkilatı, 2000, 2006). Likewise, VTE has become an important discussed issue in the recent National Education Councils (e.g., XV, XVI, and XVII. National Education Councils). Even the main issue of the XVI. National Education Council Meeting was the reconstruction of the VTE system (Talim ve Terbiye Kurulu, 1999). In this meeting, a number of decisions regarding the improvement of the teacher education system for VTE were made as well. In addition, to modernize and improve the teacher training system so as to make vocational education and training more responsive to the socio-economic needs of the country and to the key principles of life-long learning, the Modernization of Vocational Education and Training in Turkey Project (MVET) funded by the European Union was conducted by the Ministry during 2003-2006. In this project, it was asserted that the up-grading of vocational and technical teacher training is a significant factor in the improvement of the overall VET system (MVET, n.d.) because teachers in the VET system are supposed to carry out new functions and different roles in the near future. In this sense, the development of teachers with appropriate competencies and relevant vocational experience in both pre-service and in-service levels is required.

One institution that should be taken into account in this scope is The Faculty of Commerce and Tourism Education at Gazi University, which is currently the only

higher education institution educating teacher candidates for the commerce and tourism vocational secondary schools. Unfortunately, while there have been a number of studies about the evaluation of the teacher education programs toward raising the quality, there is a few evaluation studies peculiar to this unique faculty in Turkey (Tayfun, 2001; Topbaş & Yücel Toy, 2007; Ünlüönen, 2000, 2004; Ünlüönen & Boylu, 2007). Besides, while teaching critical thinking has been aspired in all educational institutions, literature in this regard points out the lack of critical thinking studies, especially experimental and evaluation studies in teacher education. Even, there has not been any available critical thinking study carried out in this faculty.

To this effect, this evaluation study carried out in this faculty was a comprehensive study taking all aspects of Development and Learning course enriched with critical thinking based instruction into account such as needs, redesign, implementation and outcomes of the course. Therefore, as well as being an evaluation study, the current study also covered the design and implementation of the course based on critical thinking instruction. Besides these, in data gathering and analyzing processes, both qualitative and quantitative methods were used as a complementary to each other. This made the study deep as well as comprehensive.

Because of these reasons and owing to the lack of comprehensive evaluation studies regarding teacher education program for the tourism and commerce vocational education and regarding courses taught based on critical thinking, findings of this study would contribute to the literature not only about evaluation, design and implementation of courses based on critical thinking but also about the improvement of vocational teacher education. Furthermore, this study delineates a general picture of the current situation related to students' critical thinking dispositions in the faculty, which may attract attention of the instructors in the faculty and in other teacher education faculties and of authorities at MONE and CHE.

Actually, not only overall evaluation results but results from each phase were also informative. In the *Context Evaluation* stage, needs related to Development and Learning course was identified. Identification of needs regarding this course would guide instructors or educational psychologists in determining where to start and which aspects of courses and programs to develop for better instruction.

12

In the *Input Evaluation* stage, the identified needs were taken into account in redesigning the course by integrating critical thinking skill activities into the course subject as a new instructional strategy. Detailed explanation of the design process may be beneficial for the educators who are interested in such course designs.

During the *Process Evaluation* stage, the students' reflections on the redesigned course progress were disclosed. If educators intend to implement a course enriched with thinking skills activities, they should be aware of these reactions and reflections toward such a course. Thus, findings of this evaluation stage would inform and warn educators to what they should be cautious.

As well as the other phases, the *Product Evaluation* stage drew attention to the significant points; either positive or negative. Program evaluation, in fact, should be a continual process. Therefore, product evaluation can never be an end point to stop. Even though it was defined as the last step of this evaluation study, it actually addressed key points for educators, who would like to design, improve, or renew such courses.

In addition to these, because of being very comprehensive and including all types of evaluation, the research design of the study would be a prototype for researchers and educators who would like to carry out similar studies toward improving either such courses, teacher training programs or training programs in the other fields.

1.4.   Definitions of Terms

Critical thinking. Paul and Elder (2006) give a brief definition of critical thinking, "thinking explicitly aimed at well-founded judgment, utilizing appropriate evaluative standards in an attempt to determine the true worth, merit, or value of something" (p. xxiv).

Program/Curriculum/Course evaluation. There is not a single definition of the evaluation. Ornstein and Hunkins (1998) discuss several definitions and agree on that it is used for the purpose of decision-making. Since this study will be based on a decision-making oriented evaluation approach, their definition which explains curriculum evaluation as a process of identifying and collecting information that will help decision makers choose various courses of action for designing and delivering curricula will be used.

13

Curriculum design. Saylor et al. (1981) define it as a "framework or pattern used in providing learning opportunities for learning (p. 29)."

Curriculum implementation. It is simply defined by Saylor et al. (1981) as instruction by which learners are engaged in the planned learning opportunities.

Needs. Need is a gap between current results and required results in resources, process and products or in other words a gap in results between "what is" and "what should be" (Kaufman, 1983). This discrepancy definition is used generally in the education field (Anderson, Ball, Murphy, & Associates, 1975; McNeil, 1996; Ornstein & Hunkins, 1998; Popham, 1988; Queeney, 1995).

Needs assessment. Ornstein and Hunkins (1998) states that needs assessment is an integral part of planning, designing and evaluating a curriculum or a program, and it has contributions to curricular renewal if it is conducted continuously. According to Rossett (1987), needs assessment is a systematic progress in which ideas and opinions from a variety of sources about performance problems or innovations are gathered in order to make effective decisions and give recommendations about what should be done.

Stakeholder. Stakeholders are persons who have a vested interest in the outcomes of a study (Fraenkel & Wallen, 2003).

Effectiveness. It is the degree to which a system's features and capabilities meet the user's needs (Carnegie Mellon University, 2003).

Achievement scores: These are scores that the students get from the achievement test.

Retention score: These are scores of the students in the retention test which is the reapplication of the achievement test 6 weeks after the semester is over.

Cumulative grade point average (CGPA): It is the mean of grade point average (GPA) of the preceding semesters. GPA is the mean of students' grades for all courses in a semester by weighting each grade with the corresponding course credit.

Critical thinking based instruction: It is the use of critical thinking based activities in teaching-learning process of the course.

Traditional/Ordinary instruction: It is the application of the regular instruction prior to this study and it includes lecturing, questioning, and drama.

CHAPTER II

REVIEW OF LITERATURE

This chapter is devoted to the literature review part of the study. It is divided into three main sections. Since this study is an evaluation of a course developed with critical thinking based instruction, firstly a review of literature in relation to critical thinking will be presented. Definition of critical thinking, its features, teaching approaches and strategies/activities and assessment techniques in teaching critical thinking will be explained in this section. Then, a theoretical review of curriculum evaluation will be given and types of curriculum evaluation, evaluation approaches and models will be reviewed. International and national research about critical thinking and curriculum evaluation will be illustrated in the last section. At the end, the review will be summarized.

2.1. Critical Thinking

In this section, literature in relation to definitions and dimensions of critical thinking and teaching approach and strategies for critical thinking will be reviewed.

2.1.1. Definition of Critical Thinking

Because of being comprehensive and broad per se, there has not been any consensus on the definition of critical thinking and features of critical thinkers. Kincheloe (2004), even, asserts that what exactly critical thinking is unknown and if it is defined it may die; and so keeping searching is seen as only alternative. Historically, while the roots of critical thinking were founded on Socrates, Dewey is generally known as the pioneer of the critical thinking tradition. Dewey defines critical thinking as "…active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusions to which it tends" (as cited in Fisher, 2001, p. 2).

In 1988-1999, in order to reach a consensus on critical thinking for the purpose of educational assessment and instruction, a group of expert researchers and theoreticians in critical thinking came together in a Delphi Research Project sponsored by the American Philosophical Association. A consensus definition of critical thinking was revealed:

> We understand critical thinking to be purposeful, self-regulatory judgment which results in interpretation, analysis, evaluation, and inference, as well as the explanation of the evidential, conceptual, methodological, criteriological, or contextual considerations upon which that judgment is based. (Facione, 1990, p. 3)

Ennis (1991) gives another definition: "Critical thinking is reasonable, reflective thinking that is focused on deciding what to believe or do" (p. 68). Fisher and Scriven (as cited in Fisher, 2001) define critical thinking as "the skilled and active interpretation and evaluation of observations and communications, information and argumentation" (p. 10). In addition, Johnson (2000) indicates, "critical thinking is a type of thinking where a person must organize, analyze, or evaluate given information" (p. 5).

Besides these definitions, Beyer (1988a) also brings out a new term for critical thinking: *evaluative thinking*. He indicates that critical thinking is evaluative in nature, because it entails precise, persistent, and objective analysis of any claim, source, or belief to judge its accuracy, validity, or worth.

Paul and Elder (2006) give a brief definition of critical thinking, "thinking explicitly aimed at well-founded judgment, utilizing appropriate evaluative standards in an attempt to determine the true worth, merit, or value of something" (p. xxiv). They also delineate it in a broader and sophisticated way and present a chart with an elaborated definition, which is exhibited in Figure 1.

> Critical thinking is the art of thinking while thinking in order to make thinking better. It involves three interwoven phases: it analyzes thinking [by focusing on the parts of thinking in any situation-its purpose, question, information, inferences, assumptions, concepts, implications, and point of view], it evaluates thinking [by figuring out its strengths and weaknesses: the extent to which it is clear, accurate, precise, relevant, deep, broad, logical, significant, and fair], it improves thinking [by building on its strengths while reducing its weaknesses]. (p. xvii)

Sometimes, critical thinking is used interchangeable with problem-solving, decision-making or creative thinking. However, it is pointed out that these terms are not synonymous and they are different but complementary elements of general cognitive processes (Beyer, 1988a; Marzano, Brandt, Hughes, Jones, Presseisen, Rankin, & Suhor, 1991; Patrick, 1986). Furthermore, Beyer (1988a) calls attention to differentiations between critical thinking and the other two. He indicates that in decision-making and problem solving there is a sequence of operations, in which one precedes the next; whereas, there is no such a sequential operation in critical thinking, which is a collection of specific operations that may be used alone or in any combination or in any order. As for creative thinking, Marzano et al. (1991) assert that a good creative thinking process generally includes a good critical thinking and vice versa.

A unique kind of purposeful thinking	→	in any subject area or topic, whether academic or personal
in which the thinker systematically and habitually displays intellectual traits	→	such as intellectual perseverance, intellectual humility, intellectual empathy, and fair-mindedness
takes charge of the construction of thinking	→	with awareness of its elements, such as question at issue, information, concepts, inferences, assumptions, implications, and point of view
imposing criteria and intellectual standards on the thinking	→	such as clarity, accuracy, precision, relevance, depth, breadth, logic, and fairness
continually improving the quality of thinking	→	making it more clear, accurate, and precise; with greater depth and breadth; more logical, more relevant and significant, and more fair

Figure 1. Critical thinking: An elaborated definition.

Source: Paul and Elder (2006, p. xxix)

2.1.2. Dimensions of Critical Thinking

Similar to its definition, variations are seen in dimensions of critical thinking because many features are identified for critical thinking. When they are examined, it is seen that some of them are written in different wording but have same meaning or some have additional features to the previously defined features. Beyer (1988a) lists 10 critical thinking skills. These are

1. Distinguishing between verifiable facts and value claims
2. Distinguishing relevant from irrelevant information, claims, or reasons
3. Determining the factual accuracy of a statement
4. Determining credibility of a source
5. Identifying ambiguous claims or arguments
6. Identifying unstated assumptions
7. Detecting bias
8. Identifying logical fallacies
9. Recognizing logical inconsistencies in a line of reasoning
10. Determining the strength of an argument or claim

Potts (1994), shortly, mentions three skills related to critical thinking based on educational research: (1) finding analogies and other kinds of relationships between pieces of information; (2) determining the relevance and validity of information that could be used for structuring and solving problems; and (3) finding and evaluating solutions or alternative ways of treating problems.

Moreover, Johnson (2000) lists eleven critical thinking skills:

1. Inferring: The students will go beyond the available information to identify what may reasonably be true.
2. Compare: Given two or more items, students will find their similarities.
3. Compare and contrast: Given two or more items, the student will find their similarities and differences.
4. Analyze: Students will break an item or event down into its component parts.
5. Supporting a Statement: Students will use appropriate reasons, details, or examples to support a statement or conclusion.
6. Decision making: Students will examine the options and alternatives in order to decide on a course of action.
7. Ordering: Given a criterion, students wil arrange events, concepts, or items in sequential order based on that criterion.
8. Evaluation/Critique: The students will make a formal evaluation based on a set of criteria.
9. Creating groups: Students will impose order on a field by identifying and grouping common themes or patterns
10. Investigation: The student will find information to answer a question.
11. Experimenting: The student will experiment to answer a question. (Johnson, 2000, p. 46-48)

One of the most detailed descriptions of critical thinking has been presented by Ennis (1991). As to Ennis (1991), critical thinking is composed of dispositions and abilities; he lists 14 dispositions and 12 abilities with processes underlying these abilities. These are presented in Table 1. He delineates critical thinking in detail so as to be used as an overall content outline for a critical thinking curriculum whether it includes direct teaching of critical thinking or infusing it in any subject matter.

Table 1

Critical Thinking Dispositions and Abilities

A. Dispositions
1. Seek a clear statement of the thesis or question
2. Seek reasons
3. Try to be well informed
4. Use credible sources and mention them
5. Take into account the total situation.
6. Try to remain relevant to the main point.
7. Keep in mind the original or basic concern.
8. Look for alternatives.
9. Be open-minded.
10. Take a position (and change a position) when the evidence and reasons are sufficient to do so.
11. Seek as much precision as the subject permits.
12. Deal in an orderly manner with the parts of a complex whole.
13. Use one's critical thinking abilities.
14. Be sensitive to the feelings, levels of knowledge, and degree of sophisticated of others.

B. Abilities
Elementary Clarification
1. Focusing on a question
2. Analyzing arguments
3. Asking and answering questions of clarification and challenge
Basic support
4. Judging the credibility of a source
5. Observing and judging observation reports
Inference
6. Deducing and judging deductions
7. Inducing and judging inductions
8. Making and judging value judgments
Advance Clarification
9. Defining terms and judging definitions
10. Identifying assumptions
Strategy and Tactics
11. Deciding on an action
12. Interacting with others

Source: Ennis (1991, p. 68-71)

Paul et al. (1989) have given another detailed description of critical thinking by taking affective domain of mental processes into consideration. Their list

19

composed of 35 strategies that a critical thinker possesses has been used widely in related research (e.g., Aybek, 2006; Özdemir, 2005; Reed, 1998; Şahinel, 2001). The list of these strategies is given in Table 2.

Table 2

Strategy List: 35 Dimensions of Critical Thought

Affective Strategies
S.1. Thinking independently
S.2. Developing insight into egocentricity or sociocentricity
S.3. Exercising fairmindedness
S.4. Exploring thoughts underlying feelings and feelings underlying thoughts
S.5. Developing intellectual humility and suspending judgment
S.6. Developing intellectual courage
S.7. Developing intellectual good faith or integrity
S.8. Developing intellectual perseverance
S.9. Developing confidence in reason

Cognitive strategies-Macro Abilities
S.10. Refining generalizations and avoid oversimplifications
S.11. Comparing analogous situations: transfering insights to new contexts
S.12. Developing one's perspective: creating or exploring beliefs, arguments, or theories
S.13. Clarifying issues, conclusions, or beliefs
S.14. Clarifying and analyzing the meanings of words or phrases
S.15. Developing criteria for evaluation: clarifying values and standards
S.16. Evaluating the credibility of sources of information
S.17. Questioning deeply: raising and pursuing root or significant questions
S.18. Analyzing or evaluating arguments, interpretations, beliefs, or theories
S.19. Generating or assessing solutions
S.20. Analyzing or evaluating actions or policies
S.21. Reading critically: clarifying or critiquing texts
S.22. Listening critically: the art of silent dialogue
S.23. Making interdisciplinary connections
S.24. Practicing Socratic discussion: clarifying and questioning beliefs, theories, or perspectives
S.25. Reasoning dialogically: comparing perspectives, interpretations, or theories
S.26. Reasoning dialectically: evaluating perspectives, interpretations, or theories

Cognitive strategies-Micro Abilities
S.27. Comparing and contrasting ideals with actual practice
S.28. Thinking precisely about thinking: use critical vocabulary
S.29. Noting significant similarities and differences
S.30. Examining and evaluating assumptions
S.31. Distinguishing relevant from irrelevant facts
S.32. Making plausible inferences, predictions, or interpretations
S.33. Evaluating evidence and alleged facts
S.34. Recognizing contradictions
S.35. Exploring implications and consequences

Source: Paul et al. (1989, p. 56)

These strategies are divided into two groups of mental structures: (1) affective strategies constituting traits of mind, and (2) cognitive strategies including proficient micro-skills and refined macro-skills. They assert that both domains are

important and complementary to each other. Unmotivated persons or those who have not dispositions toward critical thinking can neither learn thinking critically nor think critically; thus, affective domain of persons should be emphasized as much as cognitive one. In addition, the affective strategies form bases of intellectual traits of mind that best, strong, and fair-minded thinkers possess. Nine essential intellectual virtues are mentioned: independence of mind, intellectual curiosity, intellectual courage, intellectual humility, intellectual empathy, intellectual integrity, intellectual perseverance, faith in reason, and fair-mindedness (Paul, 1991; Paul & Elder, 2006). Table 3 presents the descriptions of each aforementioned trait.

Table 3

Description of Intellectual Traits

• Intellectual Humility: Having a consciousness of the limits of one's knowledge, including a sensitivity to circumstances in which one's native egocentrism is likely to function self-deceptively; sensitivity to bias, prejudice and limitations of one's viewpoint. Intellectual humility depends on recognizing that one should not claim more than one actually knows. It does not imply spinelessness or submissiveness. It implies the lack of intellectual pretentiousness, boastfulness, or conceit, combined with insight into the logical foundations, or lack of such foundations, of one's beliefs.

• Intellectual Courage: Having a consciousness of the need to face and fairly address ideas, beliefs or viewpoints toward which we have strong negative emotions and to which we have not given a serious hearing. This courage is connected with the recognition that ideas considered dangerous or absurd are sometimes rationally justified (in whole or in part) and that conclusions and beliefs inculcated in us are sometimes false or misleading. To determine for ourselves which is which, we must not passively and uncritically "accept" what we have "learned." Intellectual courage comes into play here, because inevitably we will come to see some truth in some ideas considered dangerous and absurd, and distortion or falsity in some ideas strongly held in our social group. We need courage to be true to our own thinking in such circumstances. The penalties for non-conformity can be severe.

• Intellectual Empathy: Having a consciousness of the need to imaginatively put oneself in the place of others in order to genuinely understand them, which requires the consciousness of our egocentric tendency to identify truth with our immediate perceptions of long-standing thought or belief. This trait correlates with the ability to reconstruct accurately the viewpoints and reasoning of others and to reason from premises, assumptions, and ideas other than our own. This trait also correlates with the willingness to remember occasions when we were wrong in the past despite an intense conviction that we were right, and with the ability to imagine our being similarly deceived in a case-at-hand.

• Intellectual Integrity: Recognition of the need to be true to one's own thinking; to be consistent in the intellectual standards one applies; to hold one's self to the same rigorous standards of evidence and proof to which one holds one's antagonists; to practice what one advocates for others; and to honestly admit discrepancies and inconsistencies in one's own thought and action.

• Intellectual Perseverance: Having a consciousness of the need to use intellectual insights and truths in spite of difficulties, obstacles, and frustrations; firm adherence to rational principles despite the irrational opposition of others; a sense of the need to struggle with confusion and unsettled questions over an extended period of time to achieve deeper understanding or insight.

Table 3 *(Continued)*

• <u>Faith In Reason:</u> Confidence that, in the long run, one's own higher interests and those of humankind at large will be best served by giving the freest play to reason, by encouraging people to come to their own conclusions by developing their own rational faculties; faith that, with proper encouragement and cultivation, people can learn to think for themselves, to form rational viewpoints, draw reasonable conclusions, think coherently and logically, persuade each other by reason and become reasonable persons, despite the deep-seated obstacles in the native character of the human mind and in society as we know it. • <u>Fairmindedness:</u> Having a consciousness of the need to treat all viewpoints alike, without reference to one's own feelings or vested interests, or the feelings or vested interests of one's friends, community or nation; implies adherence to intellectual standards without reference to one's own advantage or the advantage of one's group.

Source: Foundation for Critical Thinking (1996)

Paul and Elder (2006) also point out that critical thinkers routinely apply the intellectual standards (clarity, precision, accuracy, significance, relevance, completeness, logic, fairness, breadth, depth) to the elements of reasoning (purposes, inferences, questions, concepts, points of view, implications, information, assumptions) in order to develop intellectual traits leading to high quality thinking as demonstrated in Figure 2.
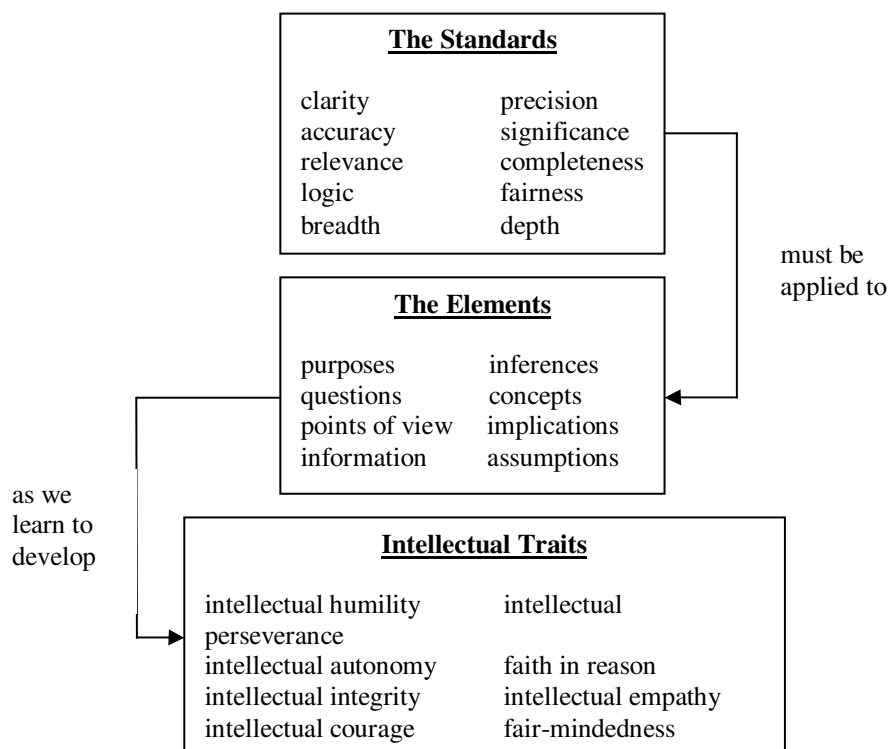
Figure 2. The mental process for developing intellectual traits

Source: Paul and Elder (2006, p. 54)

2.1.3. Teaching Critical Thinking

It has been widely accepted that critical thinking is a very essential learning and teaching tool for many years. It has been deemed as a skill that should be gained in order to meet the today's societal expectations such as quick thinking, competent communication, and ability to resolve conflict and reconcile diverse perspectives (McCallister, 2004). Research findings have supported how it helps students to learn tasks better and solve problems that they encountered in academic and nonacademic environments (McKendree et al., 2002). It is indicated that critical thinking skill should not be confused with intelligence; it is a skill that can be taught and improved in everyone as opposed to intelligence (Critical Thinking Skills and Teacher Education, 1988). Since late 1980s, strategies for teaching the function of critical thinking to all level of students have been discussed (Grant, 1988; Paul et al., 1989; White & Burke, 1992); and it has been emphasized that this skill should be taught to students at all level in the school curriculum.

Smith (2002) defines a thinking skill as "a teachable, consciously controlled, partially proceduralised, mental activity that extends normal cognitive capabilities in the performance of certain tasks" (p. 210). However, how it can be taught is a controversy issue. The two approaches are mainly explained for teaching thinking skills: the skills (or direct) and infusion approaches (Beyer, 1988a; Burden, 1998; Johnson, 2000; Maclure, 1991; Nisbet, 1993).

The Skills approach consists of teaching thinking skills separately from subject-matter content with the assumption that it is possible to teach a thinking skill explicitly. Activities and exercises, which are independent of the subject matter, are designed to improve thinking skills. Such a thinking course would not be related to any subject matter but become a subject matter itself. Cognitive Research Trust (CoRT) and Instrumental Enrichment (IE) are well-known methods developed for direct teaching of thinking skills (De Bono, 1991; Link, 1991).

According to *The Infusion* approach, thinking skills are improved within the existing school curriculum (Maclure, 1991). Thinking skills are taught within a subject matter context. For a given subject matter, teaching-learning process is reconstructed in such a way that improving students' thinking is also taken into account and so radical changes are presented in materials, tasks, content and so on (Burden, 1998). This means that the presentation of materials, responses demanded

from students, teaching methods will be changed. Teaching methods should be aimed at improving reasoning, problem solving and analysis. Thus, teachers have a big responsibility.

Actually, both approaches have pros and cons. For the direct approach, Beyer (1988a) states that at initial stage, more attention should be given to the skill rather than content knowledge because if a student focuses on a skill consciously, her/his thinking skill would improve better. In this way, a separate course would prevent students from limiting thinking to a specific subject matter, would avoid repetition of introductory principles in each subject, and would encourage the application of cognitive skills to other disciplines. Fisher (2001) addresses the doubt of educators regarding hardness of gaining the skills in a given course content; thus he favors teaching thinking skills directly and explicitly. On the other hand, Smith (2002) asserts that certain cognitive skills are specific to particular disciplines and should be taught in its context.

Concerning the infusion approach, Raths et al. (1967) state that thinking cannot be separated from content because thinking is a way of learning content. Similarly, Zohar and Dori (2003) stress that successful learning, which is an acquisition of knowledge by learning with understanding, can be attained by involving thinking skills in all school level subjects. Because, this approach allows students to use the skills in a meaningful context and helps them learn the subject matter more deeply and apply it out of school settings (Johnson, 2000; Beyer, 1988a). In addition to the impact of the infusion approach on learning content, as an effective way of teaching cognitive skills, ongoing opportunities that provide students to practice these skills in the topics are emphasized; and thus, the integration of the skills into the regular curriculum is stressed (Eggen & Kauchak, 2001). Furthermore, Beyer (1988a) indicates that direct teaching of thinking skills raises skill technicians, who apply these skills mechanically, whereas the infusion of thinking skills across curriculum provides students to be able to use these skills in daily life. Thereby, not only cognitive but also affective domain of students develops.

Which approach-direct or infusion- should be used in teaching a thinking skill is not an easy question to be answered. Unfortunately, there is not a specific framework showing which approach should be used for a particular situation because of lack of comparison studies in this respect. Nonetheless, the recent comparison

24

studies display contradictory results. For example, while Hatcher (2006) revealed that the integrated approach exhibited better results than stand-alone approach, Aybek (2006) found that direct teaching based on De Bono's CoRT model was significantly more effective than the infusion approach. On the other hand, there have been studies pointing out the effectiveness of the infusion approach on developing critical thinking skills and learning (e.g., Akınoğlu, 2001; Deniz, 2003; İrfaner, 2002; Şahinel, 2001).

Beside these discussions, what is important is to teach thinking at every stage of schooling either by specific programs which provide practice in selected thinking strategies or by restructured curricula and methods which are designed to promote and practice thinking within the traditional curriculum subjects as opposed to preparing students to pass examination, causing rote learning and giving advices for learning (Nisbet, 1993).

In this respect, Sternberg (as cited in Nisbet, 1991) gives a reasonable answer: "There is no one programme that is best for everybody or every place…One must learn about the principles of thinking and the programmes available…and then make a carefully thought out decision as to what will work best in a given setting" (p. 178). As for this study, since the starting point of the study was to increase the effectiveness of Development and Learning course on learning through critical thinking based instruction, the infusion approach was implemented.

2.1.4. Teaching Strategies for Critical Thinking

Teaching strategies and activities promoting critical thinking skill should be carefully selected in order to design a course in order to cultivate and sharpen critical thinking and learning. Before talking about teaching methods and strategies, the role of teacher should be stressed in creating a learning environment in which students realize the power of their own minds and the efficacy of their own thinking since they are encouraged to do so (Paul et al., 1989). A summary of the teacher's role is given as follows by Paul et al. (1989):

- Help break big questions or tasks into smaller, more manageable parts
- Create meaningful contexts in which learning is valued by the students
- Help students clarify their thoughts by rephrasing or asking questions
- Pose thought-provoking questions
- Help keep the discussion focused

- Encourage students to explain things to each other
- Help students find what they need to know by suggesting and showing students how to use resources
- Ensure that students do justice to each view, that no views are cut off, ignored, or fairly dismissed.

For improving students' performance in better quality thinking, including critical thinking, Halonen et al. (2002) mention some general strategies.

- Integrate course content with opportunities to practice thinking.
- Establish a classroom environment that facilitates thinking. Take time to think yourself before answering a question, and explain how you derive an answer to model thinking skills. Build in reflection, thinking and discussion time to reinforce the importance of those activities.
- Be explicit about what kind of thinking you are asking students to do. The more cognitive clues that you can provide to help them translate your directions, the more satisfying their performance will be.
- Give accurate feedback to distinguish good from poor-quality thinking.
- Reframe the value of asking questions.
- Consider the impact of learning styles on thinking and expression. (p. 288-289)

While these instructional strategies are suggested for teaching thinking skills in general, these can be applied as a way of teaching critical thinking, as well. In addition to these, four global strategies are suggested by Paul et al. (1989) for promoting critical thinking: Socratic questioning, role-playing, analyzing experiences, and distinguishing fact, opinion, and reasoned judgment.

By *Socratic Questioning*, students are encouraged to think aloud and synthesize the meaning and truth of their thoughts and beliefs so that their thoughts are elicited explicitly, they discover their thought processes and they have an opportunity to improve and evaluate their thoughts (Paul et al., 1989). Actually, questioning is the fundamental method that has to be used in teaching critical thinking. Yet, it should be applied in order to deepen knowledge, critique different perspectives, and transform ideas and actions rather than to acquire the right answers (Villaverde, 2004). In this regard, Cruickshank, Bainer and Metcalf (1995) points out the use of questioning in promoting thinking and states that divergent questions or content related questions not requiring "correctness" encourage students to think from different perspectives and in creative, complex and different ways. This way of asking questions stimulates students to think and respond creatively and gets rid of the fear of giving the "wrong" answer (Potts, 1994).

Role-playing or drama helps students to understand others, who think differently, by playing the reasoning of others (Paul et al., 1989) or to explore habits of mind and dispositions of others that they will play in role by adopting thinking of that role (Andersen, 2002). In this way, students reconstruct opposing views and can gain insights about others' perspectives. Role-play can be followed by Socratic questioning, discussion, or writing dialogs expressing opposing views for better instruction (Paul et al., 1989). Additionally, it is emphasized that drama as skits or scripts improves thinking skills since it includes cognitive processes such as metacognition (thinking about his/her own thinking while thinking about the role) or decision-making (Andersen, 2002, 2004; Ranger, 1995).

Paul et al. (1989) also assert that students should learn to *analyze experience* that they lived or the others lived. This helps them to improve their empathy skill, gain insights and develop intellectual virtues such as intellectual empathy, intellectual courage, intellectual integrity, and confidence in reason. While analyzing the experiences, they better understand the situations, people's behaviors, and their reasons and realize their own reasoning because same experiences are even interpreted differently on account of differences in personal interests, goals, and desires. Analyzing their own and others' experiences in light of the following questions would feed the development of their intellectual virtues. These questions are "(1) What are the raw facts, the most neutral description, of the situation? (2) What interests, attitudes, desires, or concerns am I bringing to the situation? (3) How am I conceptualizing or interpreting the situation in light of my point of view? (p. 49). Arguments on different analysis of experiences will also foster insights into objectivity and biasness.

In addition to these, it is emphasized that teachers should teach students *the distinction between fact, opinion, and reasoned judgment.* Students should develop their reasoned judgment ability by which in a given situation, students can arrive at a reasonable conclusion supported by evidences. On the other hand, before this, they have to learn the differences between fact, opinion and reasoned judgment. Paul et al. (1989) indicates, "students definitely need to learn procedures for gathering facts, and they doubtless need to have opportunities to express their preferences, but their most important need is to develop their capacities for reasoned judgment" (p. 50-51).

Besides these, Potts (1994) discusses three strategies for teaching critical thinking skills. One of them is *building categories* by which students categorize information by finding out the rules. Then, students are asked to evaluate if their categorization rules can be generalized by transferring the rules into different instances. *Finding problems and solutions* is one of the crucial thinking skills that are required in real life. This strategy provides an opportunity to students to improve their skills in identifying problem in a case and finding solutions and to use their skills similar to those that will be needed in similar real life problems. *Enhancing environment,* which means the arrangement of seating and visual aids in a classroom, is very important for promoting critical thinking. Seating of students should be arranged so effectively that students can interact with peers and teacher in order to prevent passive participation.

Carr (1990) reviews various types of thinking skills activities applied to content areas and mentions three ones, which are effective across different disciplines. These are critical reading, writing to learn, and classification games. C*ritical Reading* means to evaluate, draw inferences, and arrive at conclusions based on the evidence. Newspapers, magazines, television, radio; literature, articles can be used. While reading, a comparison of differing ideas might be helpful for students in developing questioning attitude. In addition to the impact of critical reading on practicing critical thinking, it is claimed that thinking can be taught by means of *Writing*. In this respect, McCallister (2004) proposes the inclusion of writing education into all school curriculums in order to give an opportunity for promoting critical thinking because it entails a thinking process per se such as retrieving information, composing ideas, participating in a world of things, ideas, events, and people, and exploring personal connections to that world. Another proposed activity by Carr (1990) is c*lassification games* that play a significant role in the development of logical thinking and abstract concepts. The integration of classification activities into content areas is very essential in terms of cognitivist learning approach and schema development on which learning is formed because these activities help the reconstruction of schemas by categorizing knowledge effectively. For this purpose, logic puzzles, verbal analogies, problem solving, attribute games and the like can be used.

As a tool of Potts's (1994) 'building categories' and Carr's (1990) 'classification games', instructors can benefit from semantic mapping, for which a number of similar terms can be used interchangeably such as concept mapping, graphic organizer, semantic webbing. Lim, Cheng, Lam and Ngan (2003) propose to use semantic mapping as a strategy for facilitating and assessing critical thinking skills of student-teachers. They indicate that semantic mapping helps to explore how we understand key concepts in a topic; to make meaningful pattern of our understanding and knowledge by linking ideas; to plan a process by categorizing, linking and organizing the ideas; and it encourages active thinking by analyzing, categorizing, synthesizing and reflecting on the key elements of what we know or have done. Semantic mapping is not just a useful tool for developing critical thinking but also for evaluating the students' critical thinking performance. It can be used to assess their ability in relating distinct topics, appreciating key concepts, and their development in relations that they perceive between concepts, to stimulate discussion or, basically, to check whether students understand the reasons for a lesson (Lim et al., 2003).

Case study and *discussion* are beneficial methods for promoting critical and reflective thinking and for allowing students to learn how to learn. A case study/discussion method entails the use of a number of critical thinking skills, because in this method, students analyze the given situation, case, or problem; identify problems or conflicts; determine central issues; ascertain resources and constraints; identify possible solutions; and assess the consequences of the decision alternatives. A list of contributions of a case study/discussion method to advancing critical thinking is presented by McDade (1995).

1. It models critical thinking and provides a laboratory in which students can practice and advance their critical thinking skills.
2. It emphasizes the process of analyzing information.
3. It is contextually based; that is, students must understand contextual nuances and make references and analyses accordingly.
4. It challenges students to identify and challenge assumptions about situations and about their own beliefs.
5. It encourages students to imagine alternatives and explore these for strengths and weaknesses.
6. It helps students to integrate learning by incorporating theory into practice and practice into theory.

7. It enables students to develop critical-listening skills because listening to and understanding the nuances and diversity of the thinking processes of others is as important as developing one's own thinking.
8. It provides opportunities for students to develop and test theories about how people and organizations function.
9. It helps students to develop teamwork and collaborative learning as students work together in small groups and in the classroom to solve the problems presented by the case with the best means possible to serve the most goals.
10. It helps students to experience, explore, and test alternative ways of thinking.
11. It facilitates the consideration of different perspectives as other students present ideas, analyses, and solutions that no one student may have thought of. (p. 10)

In this regard, the importance of case studies in meaningful learning and teaching in teacher education and in transforming knowledge into the real educational life is also emphasized by educational psychologists (Peterson et al, 1990). Indeed, transferability of knowledge to other context is an important ability that should be gained in order to be a critical thinker. Therefore, except for, several strategies described briefly in Table 4 are recommended for teachers.

Table 4

Ten Tools for Teaching for Transfer

Hugging: Making the learning experience more like the ultimate applications. Students do and feel something more like the intended applications.	Bridging: Making conceptual connections between what's learned and other applications. This is more cerebral, less experiential. Students generalize and reflect.
• Setting expectations: Simply alert learners to occasions where they can apply what they are learning directly, without transformation or adjustment. *Example:* "Remember, you'll be asked to use these pronouns correctly in the essay due at the end of the week."	• Anticipating applications: Ask students to predict possible applications remote from the learning context. *Example:* After students have practiced a thinking skill or other skill, ask, "Where might you use this or adapt it? Let's brainstorm. Be creative." List the ideas and discuss some.
• Matching: Adjust the learning to make it almost the same experience as the ultimate applications. *Example:* In sports, play practice games. In drama, full costume rehearsals.	• Generalizing concepts: Ask students to generalize from their experience to produce widely applicable principles, rules, and ideas. *Example:* After studying the discovery of radium, ask, "What big generalizations about scientific discovery does the discovery of radium suggest? Can you support your generalizations by other evidence you know of?"

Table 4 (*Continued*)

Hugging: Making the learning experience more like the ultimate applications. Students do and feel something more like the intended applications.	Bridging: Making conceptual connections between what's learned and other applications. This is more cerebral, less experiential. Students generalize and reflect.
• Simulating: Use simulation, role playing, acting out, to approximate the ultimate applications. *Example:* Simulated trials, simulated senate discussions, etc., as preparation for understanding and participating in government as a citizen.	• Using analogies: Engage students in finding and elaborating an analogy between a topic under study and something rather different from it. *Example:* Ask students to compare and contrast the structure of the human circulatory system with the structure of water and waste services in a city.
• Modelling: Show, demonstrate rather than just describing, discussing. *Example:* A math teacher demonstrates how a problem might be solved, "thinking aloud" to reveal inner strategic moves.	• Parallel problem solving: Engage students in solving problems with parallel structure in two different areas, to gain an appreciation for the similarities and contrasts. *Example:* Have students investigate a (nonsensitive) problem in their home environment and a study problem in school, using the same problem solving strategy. Help them to draw out the parallels and differences.
• Problem-based learning: Have students learn content they are supposed to use in solving problems through solving analogous kinds of problems, pulling in the content as they need it. *Example:* Students learn about nutritional needs under different conditions by planning the menu for a desert trek and a long sea voyage, getting nutrition information out of their texts and other sources as they work.	• Metacognitive reflection: Prompt and support students in planning, monitoring, and evaluating their own thinking. *Example:* After a quiz or indeed any thought-demanding activity, have students ask themselves, "What went well, what was hard, and how could I handle what was hard better next time?"

Source: ALPS (1999)

Besides the abovementioned strategies and activities, McEwen's study (1994) is worth taking into account in terms of understanding teachers' perceptions toward the effectiveness of these kinds of teaching strategies/activities on promoting critical thinking. In this study, a list of teaching methods and teacher behaviors was evaluated by 67 high school teachers. They were asked to rank teaching methods and behaviors from the most effective to the least effective one on advancing critical thinking. The results are presented in Table 5 and Table 6, respectively. Case study/problem solving, simulation, project, discussion and debates were perceived as the most effective methods by the teachers. From their points of view, the most influential behaviors were encouraging discussion, allowing time for thinking,

promoting interactive learning, and stimulating and appreciating independent thinking.

Table 5

Traditional Teaching Methods Considered Most Effective for Developing Critical Thinking Skills

Rank	Teaching method	Rank	Teaching method
1.	Case study/problem solving	10.	Demonstration
2.	Simulation	11.	Computer-aided instruction
3.	Project	12.	In-basket activities
4.	Discussion	13.	Gaming
5.	Debates	14.	Audiovisual
6.	Role-playing	15.	Field trip
7.	Large group discussion	16.	Guest speaker
8.	Library research	17.	Workbook/worksheet
9.	Independent study	18.	Lecture

Source: McEwen (1994)

Table 6

Teacher Behaviors Considered Effective for Developing Critical Thinking Skills

Rank	Teacher behavior	Rank	Teacher behavior
1.	Encouraging open discussion	9.	Accepting students' ideas
2.	Allowing time for thinking	10.	Nurturing confidence
3.	Encouraging improvement	11.	Appreciating student openness
4.	Promoting interactive learning	12.	Exhorting students to think
5.	Listening to students	13.	Encouraging group work
6.	Encouraging independent thinking	14.	Encouraging individual work
		15.	Insisting on periods of silence
7.	Appreciating students' ideas	16.	Expecting a single correct answer
8.	Displaying willingness to revise in light of new evidence	17.	Discouraging group work

Source: McEwen (1994)

Actually, whatever strategy or activities are used, it is suggested that activities should involve comparing, summarizing, observing, classifying, interpreting, criticizing, looking for assumptions, imagining, collecting and organizing data, hypothesizing, applying facts and principles to new situations, decision-making, and designing projects or investigations (Raths et al., 1967).

In conclusion, it should be kept in mind that critical thinking and its effective instruction are context-bound. Furthermore, how an instructor prepares and presents

activities to students in an educational context to promote critical thinking is affected by how broad and deep understanding he/she possesses about the subject matter (Grant, 1988). Therefore, Grant (1988) claims,

> Its effective strategies vary by subject matter, by an individual teacher's conception of that subject matter, by the way that conception is represented in work tasks for students, and by a teacher's ability to engage and sustain student attention in those tasks. (p. 2)

2.1.5. Assessment of Critical Thinking

In order to assess students' progress in critical thinking, a variety of approaches and techniques should be used by instructors. Moreover, there have been widely known and used standardized tests such as California Critical Thinking Skills Test (CCTST), California Critical Thinking Disposition Inventory (CCTDI), Watson-Glaser Critical Thinking Appraisal (W-GCTA), and Ennis-Weir Critical Thinking Essay Test (E-WCTET). While these tests are beneficial in terms of being easy to use and grade, reliance just on them for the assessment of students' progress in critical thinking skills has not been suggested.

Costa (1991b) claims that students' competency can be measured in a single test but their intellectual effectiveness entails to be assessed in a variety of situations demanding the use of various thinking strategies; thus, he proposes to collect evidences related to students' performances over time not one at a time. Moreover, in the chapter devoted to "Assessing growth in thinking abilities", it is pointed out that since the future demands thoughtful schools in which process-oriented goals toward improving students' thinking skills are aimed, product oriented assessment techniques like tests are inappropriate; and thus a variety of assessment techniques is proposed (Costa, 1991a).

In this respect, portfolio might be a beneficial tool serving this process assessment. It includes "(1) the tasks performed were done over time and in a variety of ways, (2) the tasks show evidence of learning, growth, and development and sample a wide spectrum of tasks, (3) the task performed show many levels of understanding, (4) the tasks are tailored to the individual learner to show what the learner can do" (Janesick, 2004a, p. 390). Therefore, by means of portfolio, the students' progress in learning and critical thinking skills can be monitored by themselves and teachers (Janesick, 2004a).

Besides portfolio, observation, performance in extended or long-term projects, journals, writing samples, speaking exercises, in-class presentations, videotapes of student interactions, laboratory reports, panels, simulations, and the like can be used (Costa, 1991a; McEwen, 1994).

While multiple-choice or standardized tests have some limitations, Beyer (1991) presents a guideline that teachers can follow in designing and writing thinking skill assessment instrument. Additionally, Dressell and Mayhew (1954) indicate that it is possible to prepare effective multiple-choice tests regarding critical thinking skills. In their handbook, they listed 30 practical aids for building objective tests and class exercises. They also suggest several written and oral methods of evaluation. *Short answer form* is recommended as opposed to essay-type exams. Although essays are typically and frequently used by teachers, they claim that evaluation of essays is not very objective because of either teachers or students. It is also stated that students generally are not capable of reflecting their thoughts into writing. Differently, *card analysis* helps both evaluating and teaching critical thinking. In this method, students answer a series of multiple-choice questions and then explain the reasons for their choice of responses on cards. These cards then can be used for classroom discussions. Moreover, as an interesting alternative technique, teacher may *use a recorder* to record a radio, tv, local or political speaker or students can use recorder for interviewing. Then, these are listened to by the students and there could be discussion on the opinions, yielded by these records. Another technique, *film analysis* can be used for various purposes. Students watch a film related to a particular content topic; prior to the film, the teacher can give an outline; and after they watch the film, the teacher want them to write an essay analyzing the film and give their own conclusion or a list of questions can be given to students.

Actually, in thinking-centered courses, there are various types of activities that students are supposed to participate in. In order for learning, understanding, and attaining objectives of such courses, students must take part in all these activities. Therefore, in the assessment procedure, students' participation should be taken into account as well as exams and in-and-out classroom activities like projects, assignments, etc.

In addition to these, Paul and Elder (1996) stress that strong critical thinking entails routine evaluation and improvement of personal thinking. For this reason,

based on their model for a good reasoning process shown in Figure 2, they propose a guideline by which students can evaluate each element of their reasoning in order to develop their own reasoning abilities. This guideline can be shared by teachers to assess students' critical thinking (Paul & Elder, 1996). Table 7 provides directions for both students and teachers. Students can also follow this guideline in evaluating information given in an article, speech, report, etc.

Table 7

Guideline for the Individual and Teacher Assessments of the Elements of Critical Thinking

	For students' individual assessment	For teacher assessment
1.	All reasoning has a PURPOSE: ○ Take time to state your purpose clearly ○ Distinguish your purpose from related purposes ○ Check periodically to be sure you are still on target ○ Choose significant and realistic purposes	Is the student's purpose — in an essay, a research project, an oral report, a discussion — clear? Is the purpose significant or trivial or somewhere in between? Is the student's purpose, according to the most judicious evaluation on the teacher's part, realistic? Is it an achievable purpose? Does the student's overall goal dissolve in the course of the project, does it change, or is it consistent throughout? Does the student have contradictory purposes?
2.	All reasoning is an attempt to FIGURE SOMETHING OUT, TO SETTLE SOME QUESTION, TO SOLVE SOME PROBLEM: ○ Take time to clearly and precisely state the question at issue ○ Express the question in several ways to clarify its meaning and scope ○ Break the question into sub questions ○ Identify if the question has one right answer, is a matter of opinion, or requires reasoning from more than one point of view	Assessing skills of mastery of this element of reasoning requires assessing — and giving feedback on — students' ability to formulate a problem in a clear and relevant way. It requires giving students direct commentary on whether the question they are addressing is an important one, whether it is answerable, on whether they understand the requirements for settling the question, for solving the problem.
3.	All reasoning is based on ASSUMPTIONS: ○ Clearly identify your assumptions and determine whether they are justifiable ○ Consider how your assumptions are shaping your point of view	Assessing skills of reasoning involves assessing their ability to recognize and articulate their assumptions, again according to the relevant standards. The student's assumptions may be stated clearly or unclearly; the assumptions may be justifiable or unjustifiable, crucial or extraneous, consistent or contradictory.
4.	All reasoning is done from some POINT OF VIEW: ○ Identify your point of view ○ Seek other points of view and identify their strengths as well as weaknesses ○ Strive to be fair-minded in evaluating all points of view	A point of view may be too narrow, too parochial; may be based on false or misleading analogies or metaphors; may contain contradictions, and so forth. It may be restricted or unfair. Alternatively, student reasoning involving articulation of their point of view may meet the relevant standards to a significant degree: their point of view may be broad, flexible, fair; it may be clearly stated and consistently adhered to.

Table 7 *(Continued)*

For students' individual assessment	For teacher assessment
5. All reasoning is based on DATA, INFORMATION and EVIDENCE: o Restrict your claims to those supported by the data you have o Search for information that opposes your position as well as information that supports it o Make sure that all information used is clear, accurate, and relevant to the question at issue o Make sure you have gathered sufficient information	Students would be assessed and receive feedback on their ability to give evidence that is gathered and reported clearly, fairly, and accurately. Does the student furnish data at all? Is the data relevant? Is the information adequate for achieving the student's purpose? Is it applied consistently, or does the student distort it to fit her own point of view?
6. All reasoning is expressed through, and shaped by, CONCEPTS and IDEAS: o Identify key concepts and explain them clearly o Consider alternative concepts or alternative definitions to concepts o Make sure you are using concepts with care and precision	Feedback to students would note whether their understanding of theories and rules was deep or merely superficial. Are the concepts they use in their reasoning clear ones? Are their ideas relevant to the issue at hand, are their principles slanted by their point of view?
7. All reasoning contains INFERENCES or INTERPRETATIONS by which we draw CONCLUSIONS and give meaning to data: o Infer only what the evidence implies o Check inferences for their consistency with each other o Identify assumptions which lead you to your inferences	Assessment would evaluate students' ability to make sound inferences in their reasoning. When is an inference sound? When it meets reasonable and relevant standards of inferring. Are the inferences the student draws clear? Are they justifiable? Do they draw deep conclusions or do they stick to the trivial and superficial? Are the conclusions they draw consistent?
8. All reasoning leads somewhere or has IMPLICATIONS and CONSEQUENCES: o Trace the implications and consequences that follow from your reasoning o Search for negative as well as positive implications o Consider all possible consequences	When they spell out the implications of their reasoning, have they succeeded in identifying significant and realistic implications, or have they confined themselves to unimportant and unrealistic ones? Have they enunciated the implications of their views clearly and precisely enough to permit their thinking to be evaluated by the validity of those implications.

Source: Adapted from Paul and Elder (1996) and Foundation for Critical Thinking (2007).

Additionally, one can benefit from intellectual standards for an overall evaluation of the quality of his/her own critical thinking skill by seeking answers to questions regarding each standard. Some examples of these questions are presented in Table 8. Furthermore, teachers can also apply intellectual standards in assessing each element of students' critical thinking (Paul & Elder, 1996).

Table 8

Questions That Can Be Used for Assessing Quality of Critical Thinking

Clarity	Logic
Could you elaborate?	Does all of this make sense together?
Could you illustrate what you mean?	Does your first paragraph fit in with your last one?
Could you give me an example?	Does what you say follow from the evidence?
Accuracy	Significance
How could we check on that?	Is this the most important problem to consider?
How could we find out if that is true?	Is this the central idea to focus on?
How could we verify or test that?	Which of these facts are most important?
Precision	Breadth
Could you be more specific?	Do we need to look at this from another perspective?
Could you give me more details?	Do we need to consider another point of view
Could you be more exact?	Do we need to look at this in other ways?
Depth	Fairness
What factors make this difficult?	Is my thinking justifiable in context?
What are some of the complexities of this question?	Am I taking into account the thinking of others?
What are some of the difficulties we need to deal with?	Is my purpose fair given the situation?
	Am I using my concepts in keeping with educated usage, or am I distorting them to get what I want?
Relevance	
How does that relate to the problem?	
How does that bear on the question?	
How does that help us with the issue?	

Source: Paul and Elder (2006)

In sum, altough there is not any consensus not only on the definition of critical thinking but also on the way of its teaching and assessment, literature regarding critical thinking concurs that it is a crucial skill to be taught at all level of schooling. In this sense, the selection of the aforementioned teaching approaches, strategies, or activities and assessment techniques depends on the context in which critical thinking will be applied.

2.2. Curriculum Evaluation

In order to increase students' achievement, to provide effective learning opportunities, and to improve programs, curriculums, policies or organization, anything in the schools can be evaluated at a variety of levels-classroom, school, school district, state, and even nation.

In general term, Worthen and Sanders (1987) define evaluation simply "the formal determination of the quality, effectiveness, or value of a program, product, project, process, objective, or curriculum (p. 22)". In detail form, Ornstein and Hunkins (1998) explain evaluation as a process of identifying and gathering information that will help decision makers to judge various actions for creating and delivering curricula to ensure the greatest likelihood of student attainment to overall program goals. Evaluation is defined as "a type of disciplined inquiry undertaken to determine the value (merit and/or worth) of some entity - the evaluand - such as a treatment, program, facility, performance, and the like - in order to improve or refine the evaluand (formative evaluation) or to assess its impact (summative evaluation)" (Lincoln & Guba, 1986, p. 550). As the definition addresses, the purposes of evaluation can be formative and summative. In line with these purposes, an evaluation can focus on needs assessment, process or outcome, or all (Fitzpatrick, Sanders, & Worthen, 2004).

According to Ornstein and Hunkins (1998), there are two fundamental purposes of curriculum evaluation:

- To allow curricularists to either revise, compare, maintain, or discontinue their actions and programs,
- To enable them to make decisions, to draw conclusions, and to furnish data that will support their decisions regarding curriculum matters.

2.2.1. Types of Curriculum Evaluation

There are two main evaluation types: formative and summative evaluations, which are seen very widely (Morris & Fitz-Gibbon, 1982; Ornstein & Hunkins, 1998; Worthen & Sanders, 1987). In addition to these, *needs assessment* is also considered as a part of curriculum evaluation, because it provides an initial step in an evaluation study. Without determining needs, one cannot make modifications in the curriculum planning to meet these needs. As stated by Ornstein and Hunkins (1998), needs assessment is an integral part of planning, designing and evaluating a curriculum or a program, and it contributes to curricular renewal if it is conducted continuously. Kaufman (1983) introduces the needs assessment "as a process that consists of the determination of gaps in results between "what is" and "what should be," placing the gaps in priority order for closure ("meeting the needs"), and

selecting the gaps in results of the highest priority for closure. Witkin and Altschuld (1995) state that needs assessment is a systematic process for setting priorities and making decisions about programs and allocation of resources. Moreover, Queeney (1995) considers needs assessment as a decision-making tool for continuing educators' use in specifying the educational activities or programs meeting educational needs.

The purpose of *formative evaluation,* as another main type of evaluation, is to improve an existing program and it is conducted while the program is being implemented so that it is possible to catch problems to be solved early on. As formative evaluation is an evaluation of process, it may be useful in understanding the reasons of different outcomes and improving program management. Actually, formative evaluation provides an opportunity to collect baseline data for future summative (or "impact") evaluations (Morris & Fitz-Gibbon, 1982; Worthen & Sanders, 1987). Moreover, Saylor et al. (1981) give more importance to formative evaluation. They indicate that it provides considerable information that can be used at planning, designing, implementing and disseminating stages of curriculum development; thus, they support the application of formative evaluation for continuous improvement.

Summative evaluation, on the other hand, is a process carried out in order to assess the overall effectiveness of a program after it is implemented (Ornstein & Hunkins, 1988). It provides to get the total picture of the quality of the produced curriculum. It is carried out in order to make decisions whether or not to continue the program, whether or not to expand the program, and whether or not to recommend the program for use in other school or districts (Morris & Fitz-Gibbon, 1982).

2.2.2. Evaluation Approaches

There are various classifications for evaluation approaches. Ornstein and Hunkins (1998) give evaluation models under two main headings; scientific (technical) and humanistic (naturalistic/nontechnical) approaches. Similarly, Gredler (1996) mentions two general types of approaches: utilitarian/management-oriented approach and intuitionist/pluralist approach. As a more detailed classification, Saylor et al. (1981) mention five types of evaluation models: behavioral objectives model, decision-making model, goal-free evaluation model, accreditation model, and

responsive model. Moreover, Worthen and Sanders (1987) classify evaluation approaches into six categories. These categories are objectives-oriented, management-oriented, consumer-oriented, expertise oriented, adversary oriented, and naturalistic and participant-oriented approaches. Actually, these classifications mostly cover each other; just, their name differs. Similar classifications of Saylor et al. and Worthen and Sanders can be shown as follows.

- Behavioral objectives model → Objectives-oriented approach (Scientific)
- Decision-making model → Management-oriented approach (Scientific)
- Accreditation model → Expertise-oriented approach (Scientific)
- Responsive model → Naturalistic and participant-oriented approach (Naturalistic)

These evaluation approaches differ in various characteristics from purpose to their use (see Worthen & Sanders, 1987, p. 152-155 for detailed comparative description).

Considering the purpose of the evaluation, objectives-oriented approach or behavioral objectives model is aimed to determine the extent to which objectives are achieved. In the management-oriented approach or decision-making model, the main focus is to provide useful information to aid in making decisions, while consumer-oriented approach deals with providing information about educational products to help decisions about educational purchases and adoptions. Although expertise-oriented approach or accreditation model emphasizes on providing professional judgments of quality, in adversary-oriented approach, the purpose is to provide a balanced examination of all sides of controversial issues in order to highlight both strengths and weaknesses of a program. Finally, naturalistic and participant-oriented approach or responsive model gives importance to understanding and portraying the complexities of an educational activity, and responding to an audience's requirements for information (Worthen & Sanders, 1987; Saylor et al., 1981).

2.2.3. Evaluation Models

Under each evaluation approach, there are several curriculum evaluation models. These models present a guideline for evaluators to follow throughout the evaluation process. However, there is no best model to be used. Which model to be used depends on the context in which it is used, the purpose for conducting evaluation, and the type of curriculum designs, teaching methods used, and audience

(Saylor et al., 1981). The important point is to be aware of strengths and weaknesses of the models and to be able to decide according to the situation that would be evaluated. Actually, availability of various evaluation models does not mean that one has to use one of them. Eclectic use of the alternative evaluation models is also possible and even suggested by Worthen and Sanders (1987). Some of well-known evaluation models are given as follows.

The Tyler's Eight-Year Study Evaluation Model. This model is an objective-oriented or behavioral objectives evaluation model. Tyler's systematic model encourages evaluators to determine to what extent intended objectives are being attained (Saylor et al., 1981; Worthen & Sanders, 1987). In this model, there is a circular reasoning. According to the evaluation results, if discrepancy occurs between performance and intended objectives, objectives are reformulated or redefined (Ornstein & Hunkins, 1998; Worthen & Sanders, 1987). The steps that are recommended to follow in curriculum evaluation are (1) establish broad goals or objectives, (2) classify objectives, (3) define objectives in behavioral terms, (4) find situations in which achievement of objectives can be shown, (5) develop or select measurement techniques, (6) collect student performance data, and (7) compare data with behaviorally stated objectives (Ornstein & Hunkins, 1998; Worthen & Sanders, 1987).

Metfessel-Micheal Evaluation Model. This model developed by Metfessel and Micheal is influenced from the Tylerian model. In this model, evaluators should involve participants as facilitators of program evaluation, formulate goals and specific objectives, translate goals and objectives into curriculum content and experiences, devise necessary instruments for evaluation to measure program effectiveness, carry out periodic observations with valid scales and other behavior measures, analyze data, interpret data comparing with standards of desired levels of performance, and make recommendations for implementation, modification and revision (Ornstein & Hunkins, 1998; Worthen & Sanders, 1987).

These two objective-oriented or behavioral objectives evaluation models are criticized for oversimplifying the evaluation, focusing only on outcomes not processes and over emphasizing student testing, even though they are widely used because of being easy to use and simple (Worthen & Sanders, 1987).

Provus's Discrepancy Evaluation Model. This model appears among management oriented approach models or decision-making models. It is comprised of five stages: design, installation, processes, products and cost. At each stage, there are four processes: (1) determining program standards, (2) determining program performance, (3) comparing performance with standards and (4) determining whether a discrepancy exist between performance and standards. Decision maker evaluates whether there is an existing discrepancy in order to make a decision to decide to go to the next stage, recycle to a previous stage, start the program over, modify performance or standards, or terminate the program. This decision making process is repeated at all stages. (Ornstein & Hunkins, 1998; Saylor et al., 1981)

Stufflebeam's Context, Input, Process, Product (CIPP) Model. This model is also known as a management oriented approach model or decision-making model. In this model, evaluation is a continuing process of describing, gathering, and providing required information to decision makers. Information gathered through these stages is used to make decision toward that stage and the further stage (Ornstein & Hunkins, 1998; Saylor et al. 1981; Worthen & Sanders, 1987). That is, context evaluation serves planning decisions; input evaluation serves structuring decisions; process evaluation serves implementing decisions; and product evaluation serves recycling decisions.

Within the framework of this evaluation model, the purpose of *context evaluation* is to determine what needs are to be addressed in an educational program. The results help defining objectives of the program. Thus, it focuses on evaluating needs, priorities, shared vision of participants, expectations of the organization, and how organizational efforts fit in their broader time and location contexts. The purpose of *input evaluation* is to determine what resources are available, what alternative strategies for the program should be considered, what plan seems to have the best potential for meeting needs. It focuses on evaluating alternative inputs that could be considered for addressing concerns such as vision, purposes, alternative curricula, instructional strategies, participants, technologies, etc. The purpose of *process evaluation* is to determine how well the plan is being implemented, what barriers threaten its success. Once these are answered, procedures can be monitored, controlled and refined. Process evaluation focuses on evaluating the processes that are used to address needs clarified in the context evaluation. Examples of processes

include organizational structure, instructional strategies, cooperation among organizations, use of technologies, involvement of faculty, curriculum development, course development, etc. Finally, the purpose of *product evaluation* is to determine what results were obtained, how well needs were reduced, what should be done with the program after it has run its course. It focuses on evaluating the results or products uncovered by the previous three evaluation activities. (Worthen & Sanders, 1987)

Eisner's Connoisseurship Evaluation Model. One of the expertise oriented approach model or accreditation model is the Eisner's connoisseurship evaluation model. In his model, Eisner recommends educational criticism and connoisseurship as a way of evaluating a curriculum. He defines connoisseurship as the art of appreciating the significant situation within educational organization (Ornstein & Hunkins, 1998; Worthen & Sanders, 1987). The role of the evaluator is to describe the real scene of an existing situation. Therefore, observation, especially participant observation, is the main instrument to collect data. While observing, the evaluator should keep the following questions in his/her mind: what has occurred as a result of the new program? what kind of events were encountered? how was the participation of students and teachers participate in these events? etc. When qualitative instruments are used, a question related to scientific validity arises. However, in this model, Eisner focuses on referential adequacy and structural collaboration to handle validity concern. Referential adequacy means the assessment of the empirical soundness of observations and interpretations, while structural corroboration is the examination of the consistency among various parts of the criticism (Ornstein & Hunkins, 1998).

Stake's Congruence-Contingency Model. This model is mentioned as a naturalistic and participant oriented evaluation approach model or responsive model. Stake emphasizes two basic actions in evaluation process; description and judgment (Worthen & Sanders, 1987). Thus, the main purpose is to obtain data to make full description and to present judgments regarding the program being evaluated (Ornstein & Hunkins, 1998; Worthen & Sanders, 1987). This model provides a framework explaining how to collect and interpret data. According to Stake, there are three types of data that can be gathered to have adequate information: antecedent, transactions and outcomes (Ornstein & Hunkins, 1998; Saylor et al., 1981; Worthen & Sanders, 1987). *Antecedent* is any condition that exists prior to teaching and

43

learning that may impact outcomes; *transactions* are interactions the students have with certain curriculum materials and classroom environments and *outcomes* are the products of programs-achievement, attitudes. After data is collected, contingency among variables and congruence within variables are interpreted. In this model, contingency means the relationships among the three variables and congruence means the match what is intended and what is observed (Ornstein & Hunkins, 1998, Saylor et al., 1981).

Stake's Responsive Evaluation Model. This is another naturalistic and participant oriented evaluation approach model proposed by Stake. In this model, the main concerns are curriculum activities and processes rather than intents and outcomes. In addition to observation, this model relies on informal and natural communication. The steps of curriculum evaluation according to this model are outlined by Stake as:

1. Negotiate a framework for evaluation with the sponsors
2. Elicit topics, issues, and/or questions of concern from the sponsors
3. Formulate questions for guiding the evaluation
4. Identify the scope and activities of the curriculum; the needs of clients and personnel
5. Observe, interview, prepare logs and case studies, etc.
6. Identify the major issues and questions
7. Present initial findings in a tentative report
8. Analyze reactions and investigate predominant concerns more fully;
9. Look for conflicting evidence that would invalidate findings, as well as collaborative evidence that would support findings
10. Report the results (Ornstein & Hunkins, 1998).

Briefly, there are various curriculum evaluation models; therefore, an evaluator, first of all, has to consider the relevance of the models to the context under study. Concerning the current study, Stufflebeam's CIPP model provides more systematic and comprehensive framework in response to research questions of the study because each research question corresponds to a component of the CIPP model as shown in Table 9.

Table 9

Relevance of Research Questions to the Components of the CIPP Model

Research questions		Components of CIPP model
(1) What aspects of Development and Learning course need to be improved?	→	Context Evaluation
(2) How can Development and Learning course be designed according to critical thinking based instruction in the direction of meeting instructional needs of the students?	→	Input Evaluation
(3) How well is this redesigned course being implemented from the students' points of view?	→	Process Evaluation
(4) What is the impact of the redesigned course as compared to the existing one (traditional instruction)?	→	Product Evaluation

2.3. Research on Critical Thinking and Curriculum Evaluation

In this section, research regarding curriculum evaluation and critical thinking will be reviewed. In order to reveal perspectives and trends of research in Turkey and abroad, the studies will be mentioned under two corresponding headings.

2.3.1. Research on Critical Thinking Conducted in Turkey

Review of research regarding critical thinking revealed that a number of studies devoted to the determination of critical thinking level of students (e.g., Akbıyık, 2002; Dayıoğlu, 2003; Kaya, 1997; Kürüm, 2002; Özdemir, 2005; Türnüklü & Yeşildere, 2005). These studies demonstrate that critical thinking level of university students and prospective teachers is at moderate level which is not intended; thus, they point out the necessity of courses either directly teaching or integrating critical thinking into course content so as to promote critical thinking skills of students in higher education and teacher education. Besides, there have been also experimental studies regarding the design, development and implementation of such courses at different education levels from elementary to higher education. Because of being more relevant to this study, this section is designated for these experimental studies examining the impact of critical thinking based instruction on the improvement of critical thinking skills, achievement and attitudes toward the corresponding subject matter.

Akınoğlu (2001) studied the impact of science teaching with critical thinking based instruction on learning outcomes of the fourth grade students in an elementary school. Pre-posttest control group experimental design was used. A science achievement test, a critical thinking skills scale, and an attitude scale were utilized. Since a significant difference was found between two groups, he concluded that compared to the traditional instruction, teaching science based on critical thinking skills was significantly more effective on the achievement, on the attainment of the behaviors regarding the components of critical thinking, and on the attitudes toward science course.

Şahinel (2001) examined the impacts of Turkish teaching curriculum, which was designed based on the development of integrated language skills through critical thinking skills, on achievement and retention by using pre-posttest control group experimental design in which groups were selected from the fifth grade students in Beytepe Primary School. Two tests; one for achievement and the other for attitudes toward the course, were administered to the students as pretests and posttests. The achievement test was also applied as retention test three and fourteen weeks after the training was over. He found that while there was no difference between two groups on the pretest results, the posttest results revealed that the treatment group exhibited better results in the achievement and attitudes toward the course than the control group. In addition to these quantitative results, qualitative data gathered through observations, field notes, interview with the teacher, diary of the teacher, and open-ended student survey were also analyzed. As a result, this study showed that improving integrated language skills through critical thinking skills was more effective than traditional methods.

Also, in an Anatolian High School in Turkey, the Turkish Geography course was taught based on critical thinking method; and its impact on students' learning was examined through an experimental study (Deniz, 2003). According to the results obtained from the achievement test, critical thinking method was more influential than lecturing method.

Gözgür (2003), in her study, examined the enhancement of critical thinking skills via reading skills. A pretest-posttest experimental design was realized at Gazi University Preparatory School and critical thinking based reading activities were utilized in the treatment group. Two parallel tests based on critical reading were

administered as pretest and posttest and a questionnaire prepared for determining students' perceptions toward their own and their peers' critical thinking skills. The significant differences between pretest and posttest results highlighted that critical thinking based reading activity had an important role on the students' reading skills compared to the classical approach to reading instruction.

A similar study in which critical thinking strategies were integrated into reading and writing assignments at the English Preparatory School at Hacettepe University was conducted by Özçınar (1996) through an experimental study. The purpose of the study was to determine the impact of this instruction including problem solving, decision making, reasoning, creativity and imagination on students' achievement in reading and writing. Reading and writing activities requiring pair or group work, real-life problems, empathy, summarizing the reading passages, asking questions, and supporting ideas took place in the treatment group. A midterm exam results and teacher-made real-life problems were evaluated within the scope of this study. The treatment caused significant differences only on the students' creativity and imagination skills and on their reading rather than writing.

Kökdemir (2003), who studied the decision-making and problem solving strategies of university students under uncertainty, also examined the critical thinking disposition of the students by assuming that critical thinking affects the strategies under consideration. For this reason, an experimental study was carried out with the freshman students in the Faculty of Economic and Administrative Sciences at Başkent University. In the three treatment groups with 103 students in total, critical thinking skill activities in two course books and one book related to critical thinking in psychology were used as in-and out-class exercises in the Introduction to Psychology course, while traditional instruction was used in the two control groups with 65 students in total. CCTDI-T which was the adapted Turkish version of the CCTDI by the researcher was administered at the beginning and end of the semester in the treatment and control groups concurrently. Significant differences between groups were obtained in favor of treatment group. The correlations between critical thinking and academic achievement in all courses that the students took at the same semester were also estimated and statistically significant positive relationships were found. Moreover, the results revealed that there was a significant improvement in the students' critical thinking disposition in favor of the treatment group. Thus, this

study supported that teaching critical thinking skills results in positive improvements in thinking skills.

Another experimental study regarding the effects of Micro Teaching course, in which instructional materials promoting critical thinking were used, on the students' critical thinking was conducted by Semerci (1999) in the Faculty of Technical Education at Fırat University. A scale for critical thinking was developed and administered as pre-and posttest by the researcher. Besides this scale, the students' critiques regarding a video-cassette watched at the beginning and end of the semester were graded. Lastly, their answers given in the critical thinking activities were analyzed. Control-treatment group comparisons in terms of scores on the scale, grades on the critiques, and answers in the activities revealed that the students in the treatment group had better results than those in the control group. This means that this experimental study was effective in the improvement of the students' critical thinking skills. This study implies that critical thinking skills can be cultivated within learning environment supported by the critical thinking based materials and activities.

Afterwards, Semerci (2003) studied the impact of Development and Learning and Instructional Planning and Evaluation courses on doctoral students' critical thinking skills by using the same scale. A significant improvement on the students' critical thinking skills was observed. Although no critical thinking skill activities were intentionally integrated into these courses, the teaching strategies and methods that have been already used such as directing the students toward research, using discussion and questioning methods, stimulating students for participating and asking questions were supposed to be influential factors supporting this improvement. He also predicated that because of being mature enough as being doctoral students, they might have listened to each other critically and this might have contributed to the promotion of their critical thinking skills.

A comparison of two approaches to teaching critical thinking (infusion and direct approaches) has been recently searched by Aybek (2006). She investigated the effects of two approaches to teaching critical thinking on prospective teachers' critical thinking level and disposition via a pretest-posttest experimental study. In direct teaching, Edward De Bono's skill based CoRT1 thinking program was used. As an implementation of the infusion approach, social studies subject was taught by

means of content based critical thinking program. CCTDI, E-WCTET and Personal Information Forms were the instruments that were used. There were two experimental and one control group. In terms of critical thinking disposition and critical thinking level of the students, the treatment groups displayed better results than the control group while the skill based experiment group was significantly better than the content based experiment group. However, correlations between academic achievement of the treatment group students in courses they took at the same semester and their CCTDI and E-WCTET scores were not statistically significant. Even for some courses, the correlations were negative as opposed to the results obtained in Kökdemir's (2003) study. Concerning the attitudes of the students toward critical thinking, the results revealed that the students in both groups had realized the necessity of teaching critical thinking to prospective teachers. Especially, because of being overloaded the students in the content-based group had negative reactions toward critical thinking based instruction at the beginning, but then they had realized its positive impact on better learning and understanding the subject without memorizing.

Different from the preceding studies that are considered as examples of the infusion approach in developing critical thinking, Türkmen Dağlı (2008), in her comparative case study, has examined how teachers integrate the development of students' critical thinking skills into their teaching during their planning, interactive and reflective practices. She also evaluated how students in 4th grade Turkish course feel about the influence of their instruction. She observed classrooms of three teachers from different schools and interviewed with them and their students. Moreover, she analyzed documents comprised of student logs, lesson plans, and supplementary materials. She drew a portrait of the context where integration of critical thinking skills was interpreted differently by the teachers in their planning, implementing, and reflecting practices. The factors that were emerged as effective determinants in this respect included their autonomy, their methodological stance, relevance of topics, their approach to reading skills and interdisciplinary connection, classroom climate and management, perception of their realm of influence, their approach to challenge, their discrimination of thinking concepts, and their perceptions toward their students' reasoning and learning.

2.3.2. Research on Critical Thinking Conducted Abroad

Since critical thinking has been appraised in USA and Europe before than Turkey, there have been a huge number of studies in this respect. Similar to those carried out in Turkey, these studies can be divided into two groups: those examining critical thinking level of students and those studying teaching critical thinking skills. In this section, rather than studies in the former group (e.g., Lampert, 2007; McBride, Xiang, & Wittenburg, 2002; McBride, Xiang, Wittenburg, & Shen, 2002; White & Hargrove, 1996), the review will be limited to studies in relation to teaching critical thinking.

Research about teaching critical thinking skills was generally emphasized on the infusion approach. Celuch and Slama (1999) conducted a case study in which critical thinking skills approach was used in teaching an undergraduate advertising principle course. In this study, at the beginning critical thinking skills according to the Paul's critical thinking model (see Figure 2) were introduced, then these skills were modeled and practiced with the engagement of the students in the given in- and out-class assignments. In conclusion, periodic formal assessment used for providing feedback on students' self-assessment and their perceptions toward critical thinking displayed that the students perceived their critical thinking skills higher than before and considered the instruction and the instructor better than traditional content-oriented method. Learning through thinking, group activities/interaction, and exposure to different people/viewpoints were indicated as the strength of the course while lack of time was expressed as the weakness of the course.

In another study, the Paul's model was integrated into a U.S. History course (Reed, 1998; Reed & Kromrey, 2001). The impacts of this teaching model on students' abilities to think U.S. history and everyday issues critically, on their critical thinking dispositions, and on their knowledge of history content were investigated. Various data collection tools were used. Document based questions (for posttest) obtained from U.S. Education Testing Service and the Ennis-Weir Critical Thinking Essay Test (for pre and posttest) were used for the purpose of measuring students' critical thinking ability. the CCTDI (for pre and posttest) was utilized for determining students' dispositions. Finally, for their achievement in history content, the College Board Achievement Test in American History and Social Studies (for pre and posttest) was applied. Besides these, a demographic instrument and the student

perception of instruction form were administered to the students and interviews were realized with them. In two treatment groups, the Paul's model and the use of the model in analyzing history readings given in their textbook were taught, assignments for using this model were given and, then, they were discussed. As for the control groups, there is not an explicit teaching of any reasoning model. The students in these groups were asked to analyze the same readings but with different approach; they answered questions at the end of readings, which were also thought provoking questions, and then, they discussed their finding as in the treatment groups. The results showed that the integration of the Paul's model into a history course significantly improved the students' historical and critical thinking skills. However, there were not significant differences in the students' critical thinking disposition and in their achievement on history content between two types of instruction. Regarding academic achievement, he thinks that teaching a thinking skills means suffering from time for teaching content; thus, he presupposes less achievement in such treatment groups. Based on this assumption, he interprets the similarity in the achievement between experimental and control groups as a success in balancing content knowledge in these groups.

Another experimental study in which infusion approach to teaching critical thinking was applied was carried out by Solon (2007) in an Introductory Psychology course. In the treatment group, 10 hours of class time during semester was left for practice of generic critical thinking and 20 hours for homework comprising writing and reading exercises. In order to provide equivalence of the groups, instead of 10 hours critical thinking activity time, students in the control groups were asked to go over Study Guide exercises in 10 class hours. Similar to Reed and Kromrey (2001), he presupposed that spending 10 class hours for critical thinking activities might cause a significant cost in terms of content learning. Cornell Z Critical Thinking Test and a psychology learning test were administered to students as pre and posttest. The results showed that there was a significant improvement in the generic critical thinking skills of students in favor of the treatment group. Regarding psychology learning, comparative analysis revealed that there was not a significant difference between groups. He infers from this result that spending time for critical thinking instead of emphasizing content does not impede psychology learning.

Hatcher (2006) argues the superiority of integrated critical thinking courses over stand-alone ones by exemplifying a longitudinal study conducted in Baker University for 15 years (1990-2005). Three special courses; two for freshmen and one for seniors, were designed. In the two freshmen courses, instruction in writing was integrated with logic and critical thinking and these courses were given in two following semesters. For the first six years (1990-91 to 1995-96), E-WCTET was administered to freshmen at the first week of fall semesters and at the end of spring semesters. When these students become senior students and take the other integrated critical thinking course, this test was carried out again. The scores of these students were compared with two groups in other institutions: a group of students in a standard logic class and those in a stand-alone critical thinking course. Six-year analyses showed that students in the integrated critical thinking courses showed significantly better progress between pretest and posttest. The following years (1996-97 to 2004-05), CCTST was used. The pretest and posttest of CCTST were resulted in similar gains in favor of integrated critical thinking courses. Thus, this study concludes that integrated critical courses are superior to stand-alone ones.

Besides these, concerning the impact of pedagogy on critical thinking development, Tsui (2002) undertaken a study based on classroom observations and interviews administered in colleges. In this study, critical thinking development of students was determined based on their self-report. Though the improvement in critical thinking of students was not measured on a quantitative and objective test and, thus, a statistical causal relation could not formed, the interviews and observations displayed that especially classroom discussion and writing were two effective teaching techniques. In other words, it was recognized that the more writing exercises and discussion were emphasized, the better the development of critical thinking was. Effective questioning and classroom participation were also observed in the discussion classes. Previously, she conducted a similar study in which how different types of courses and instructional techniques affect self-reported growth in critical thinking was examined (1999). It was revealed that having a paper critiqued by an instructor, carrying out an individual project, working on a group project, giving a class presentation and taking essay exam were significantly and positively correlated with students' perceptions about development in their critical thinking.

Burbach, Matkin, and Fritz (2004) investigated whether active learning strategies based on critical thinking teaching methods in an Introductory Leadership course have an impact on fostering critical thinking skills. Within the scope of this study, journal writing, service learning project, small group projects including scenarios, case studies, role playing and student presentations, and questioning were used. Comparison of pretest and posttest results of WGCTA Form B, administered to 80 students from different grade level, pointed out a significant increase on the posttest scores. Although this result signifies that active learning strategies foster critical thinking skills, which strategy had a significant effect on critical thinking skills had not been examined and so not known.

Moreover, Harrigan and Vincenti (2004) sought the effectiveness of cross-cultural assignments on higher order thinking skills among which they focused on 6 of 35 dimensions of critical thinking posed by Paul et al. (1989). This study included undergraduate students enrolled in Family Decision Making (an online course) and Consumer Issues courses. In these courses, students were required to carry out a cross-cultural assignment with a partner, an international student. Both sides were asked to write a paper about what they have learned from problem solving experiences and how they can transfer what they have learned into other context. They also wrote reflective journals. According to written papers and reflections, the assignment helped US students' critical thinking, reflective evaluation and ethical reasoning skills although they encountered some problems, especially communication problems with their partner.

Williams, Oliver, and Stockdale (2004) investigated the predictive and outcome status of a subject-specific and a generic measure of critical thinking in a course by undertaking an experimental study promoting critical thinking skills in an undergraduate Human Development course (with five units; physical, cognitive, psychological, social, and character) in a Teacher Preparation program. There were 3 treatment and 2 control groups (200 students in total). In the treatment groups, students were asked to answer practice questions posted on the website per unit prior to the class session where these questions were discussed. While in the treatment groups, these questions were involving those measuring subject-specific critical thinking, in the control groups these questions were replaced by parallel questions in terms of the same course concepts without including critical thinking concepts. The

Psychological Critical Thinking test as a subject-specific measure of critical thinking and W-GCTA for a generic measure of critical thinking were administered as pretest and posttest. In order to determine students' performance on the content, multiple-choice exams per unit requiring logical reasoning and a combination of recall and logical reasoning and essay quizzes necessitating recall of specific information were utilized. It was observed that the correlations of critical thinking tests with multiple choice exams were higher than those with essay exams. Among critical thinking tests, the posttest subject-specific measure of critical thinking had a higher correlation and according to regression analysis, its pre-scores predicted exam scores better than those of generic critical thinking test. An examination of the impact of the treatment on students' critical thinking elicited that a significant progress from pretest to posttest was seen in the psychological critical thinking test scores for the treatment groups but there was no significant difference in the generic critical thinking test. Briefly, it was concluded that precourse subject specific critical thinking was a better predictive measure of exam performance than generic critical thinking and such experiment significantly influenced the improvement of subject-specific critical thinking rather than generic critical thinking.

In their study, Osana and Seymour (2004) described a rubric and its use for measuring the development of critical thinking. For this purpose, they implemented the cognitive apprenticeship intervention in a class of preservice teachers at the University of Missouri – Columbia. The purpose of this intervention including modeling, coaching, and scaffolding and fading was to improve students' argumentation and critical thinking skills. This intervention implemented during five weeks in the second semester of the course entitled "Inquiry into Schools, Community, and Society", which is taught three consecutive semesters as a part of innovative teacher education program. Engagement of the students in argumentation and reflection through discussion and writing was the main purpose of the intervention. For these reasons, although the focus of this study was the rubric, it reveals information regarding the impact of the intervention on critical thinking. A 30-minute essay test including a case study was given to the students before and after the intervention. The responses were evaluated based on a rubric developed to measure (a) conceptions and use of evidence, (b) notions about research and its applicability in evaluating complex social problems, and (c) ability to consider

alternative perspectives. Qualitative assessment revealed that the abovementioned critical thinking skills of preservice teachers in this course were improved.

To sum up, research carried out in Turkey and abroad, in general, displayed that critical thinking based instruction in which critical thinking is incorporated into course content positively affects both the enhancement of learning and the development of critical thinking skills. In these studies, active learning activities such as critical reading and writing, group and individual projects, discussion, questioning, role playing, case studies and problem solving, journal writing, student presentation, interaction and participation were appeared as effective means to this intended end. However, there are a few studies like Reed's (1998; 2001) and Solon's (2007) experimental studies in which academic achievement did not differ between critical thinking based instruction and traditional instruction. Since they assume that focusing on critical thinking may hinder subject learning, they expect to have lower achievement; thus, they interpret such result as a success. In conclusion, no negative impact has been encountered in either case.

2.3.3. Research on Curriculum Evaluation Conducted in Turkey

Although there are numerous studies as regards curriculum evaluation in Turkey, evaluation studies about teacher education programs and courses come into prominence in accordance with the scope of this study. To begin with, the most conspicuous point in these studies is that especially studies evaluating the effectiveness of ongoing programs as to whether the intended outcomes were attained or not are outweigh.

Among these studies, those evaluating especially School Experience I, II and Teaching Practice courses in terms of effectiveness in favor of prospective teachers' development are frequently encountered. In these studies, data collected through questionnaires and interview revealed that both the prospective teachers and mentor teachers, on the average, agreed that these courses are generally beneficial for the development of students' teaching skills (Azar, 2003; Gökçe & Demirhan, 2005; Harmandar, Bayrakçeken, Kıncal, Büyükkasap, & Kızılkaya, 2000; Sarıtaş, 2007; Ünlüönen & Boylu, 2007). For instance, in Sarıtaş's (2007) study, prospective teachers indicated that School Experience I course was beneficial for being acquainted with teaching life, teachers' tasks, school environment, and students'

behaviors; observing student-teacher interaction; and learning healthy communication with students, classroom management, effective questioning and principles in the schools. Moreover, Ünlüönen and Boylu (2007) found out that of these three courses, Teaching Practice course was perceived as the most beneficial course. In these studies, rather than the contributions of these courses, problems and needs were detected such as intensive course schedule at the same period of time with this course, insufficient time for practices, inadequacy of course hours and the number of instructors, lack of coordination and cooperation between faculty and school, partiality in choosing mentor teachers, no observation by instructors, not considering these courses essential, and not being concerned by instructors of the course or principles of schools. Interestingly, it was noticed that while instructors criticized these courses as they were not administered in accordance with their purposes (Ünlüönen & Boylu, 2007) and teacher candidates mostly indicated that mentors were not adequate in assisting them while preparing and implementing lesson plans (Gökçe & Demirhan, 2005), mentor teachers perceived these courses very beneficial and, even, considered that they fulfilled their responsibilities (Gökçe & Demirhan, 2005; Sarıtaş, 2007; Ünlüönen & Boylu, 2007).

Besides School Experience I-II and Teaching Practice courses, there are a few studies evaluating Instructional Planning and Evaluation course. In Kutluca, Birgin, and Çatlıoğlu's (2007) study, the activities carried out in the course were evaluated by 146 prospective teachers in the Department of Elementary Education and in the Department of Secondary Science and Mathematics Education at Karadeniz Technical University. The questionnaire results showed that for 66 % of the prospective teachers the activities contributed to their learning, retention, participation, and practice. It was also found out that on account of these activities, they, on the average, understood the importance of planning, measurement and evaluation and they acquired more knowledge in planning, teaching-learning methods and measurement and evaluation techniques. These activities were perceived effective in their social, personal and professional development by the majority.

A more comprehensive research about the evaluation of Instructional Planning and Evaluation course was conducted by the researcher herself with a coauthor in the Faculty of Commerce and Tourism Education by using CIPP model

(Topbaş & Yücel Toy, 2007). This model was used for formative purposes, because the effectiveness of activities in an ongoing course in which a student-centered approach was being implemented was evaluated. Needs assessment at the context evaluation stage was undertaken in order to identify the needs and problems in relation to the activities of the course a few weeks after the semester started. Then, as to the identified needs, new teaching strategies were determined at the input evaluation stage and these strategies were implemented. During this implementation stage, the course was observed and a questionnaire was administered to students. Finally, at the product evaluation stage, another questionnaire was applied and an interview was held with the instructor of the course. The results revealed that while there were problems at the beginning, at the end of the semester, students' negative attitudes turned to positive on account of effective strategies implemented at the input evaluation stage. Although this study resembles to the current study in terms of evaluation process, it was not as comprehensive as the current one.

Akpınar Wilsing's (2002) evaluation study was also broad in scope. She evaluated the effectiveness of Instructional Planning and Evaluation (IPE) course as a part of faculty development program and then suggested certain actions that can be taken to improve the course and the future faculty members. This course is designed with the request of HEC for the research assistants who are studying and working at METU in line with 35th item of the Higher Education Law. In this course, a variety of teaching-learning strategies is employed based on adult learning theory. She used Lawler and King's Adult Learning Model as a reference for evaluating this course and determining research questions. This model consists of four stages; preplanning, planning, delivery and follow-up. When research questions shaping these stages were examined, it was noticed that this model might be a corresponding model of CIPP for formative purposes. In this respect, this study is similar to the current study. However, IPE course was not redesigned herein; it was evaluated when it has been already implemented. Participants of the study were 12 research assistants and data were collected via a number of qualitative methods; demographic information, reflection sheet, concept maps, individual interviews, document analysis, classroom observations, group interviews and self and course evaluation sheets. The results displayed that this course was beneficial for the research assistants and made them to have positive attitudes and skills toward student-centered approach in teaching.

57

Özen (1997) examined the effectiveness of an in-service training program for improving English levels of Anatolian High School science and mathematics teachers. The results showed that while there have been various institutional attempts for satisfying the participants' needs and expectations, the participants were not successful in implementing what they have learned during training.

Besides, Özonay (2002) carried out a study in which an in-service training program for novice teachers was evaluated from their points of view. The participants were selected from elementary and secondary schools in Eskişehir. Their perceptions toward the program were gathered through a questionnaire. According to findings, the strengths of the program were derived from meeting needs of teacher candidates adequately, having content appropriate for attaining objectives of the program, having competent and expert instructors, and providing a qualified learning environment. On the other hand, the candidates expressed that proper teaching methods, techniques and materials were not used and content was not comprehensive and innovative enough.

There have been several studies examining the overall effectiveness of teacher training programs. One of these studies was conducted by Çiçek (1998). He evaluated the effectiveness of Physical Education Teacher Education (PETE) Program at Middle East Technical University. In this study, an objective-oriented evaluation model was used. The focus of the study was to ascertain to what degree objectives of the PETE program are achieved by the students and how the PETE program is perceived by graduates. In addition, perceptions of graduates were also taken into consideration (Çiçek, 1998).

In this respect, Başaran (2004) evaluated the effectiveness of Anatolian Teacher High Schools in terms of serving their intended purpose. She used Stufflebeams' CIPP model, but only context and product components were considered. Therefore, it was not a full application of the CIPP model. She found that Anatolian Teacher High Schools serve their intended purposes, but not in an expected way. Therefore, some reform movements were recommended.

Moreover, pedagogical courses in Anatolia Teacher High School programs were evaluated in terms of their effectiveness on leading students to teaching profession by Çubukçu (1997). For this reason, an attitude scale was administered to 1000 senior students. Within the scope of this study, each aspect of courses

(objective, content, teaching-learning process, assessment) was evaluated from teachers' point of view by using a questionnaire.

Within the scope of reconstruction of teacher education in Turkey in 1998, teacher education programs were modified; some courses (i.e., Educational Philosophy) were removed and some were united. In this context, several studies searching the effectiveness of this reconstruction were undertaken. Of them, Dikici, Yavuzer, and Gündoğdu (2006) studied the extent to which the reconstructed courses were beneficial for graduates from Primary School Teacher Education, Turkish Language and Literature Teacher Education, Social Sciences Teacher Education, Music and Painting Teacher Education programs in Niğde University. The graduates mostly specified that Development and Learning, Classroom Management and Teaching Practice courses were the most beneficial courses and Introduction to Teaching Profession, Instructional Planning and Evaluation and Instructional Technologies and Material Development courses were the least beneficial ones.

As it can be noted from these studies as regards evaluation of programs or courses, there is a lack of comprehensive studies including evaluation of needs assessment, design and implementation processes. The studies generally emphasized on the impact of programs or courses, after they are implemented. Apart from these studies, there have been a number of experimental studies in which redesigned or newly designed programs were implemented in teacher education programs for the purpose of evaluating the implementation process or impact of these designs. Thus, these studies will be mentioned below.

Process and outcome of layered curriculum was evaluated in the study of Demirel, Şahan, Ekinci, Özbay, and Begimgil (2006). Even though, it was not mentioned, this study seems to be an implementation of process and product evaluation of CIPP model. In this experimental study, layered curriculum, which is an approach taking individual differences into account in teaching-learning process by dividing learning objectives into three layers (C-bottom layer: knowledge and comprehension; B: application; and A-top layer: analyze and synthesis), was implemented in a 6th grade class on the chapter entitled "Discovering Space" in the subject area of Life Sciences. Data collection tools of the study were an attitude scale, an achievement test, observations and interviews. The results uncovered that in terms of students' attitudes and achievement there was not significant differences

between treatment and control groups. Moreover, the level of students that was reached at the end of the instruction did not affect their attitudes and achievement. On the other hand, qualitative findings supported the effectiveness of layered curriculum on meeting individual learning needs, ensuring active participation, and providing student-centered environment.

Cengizhan (2008) implemented a modular instruction design in the Guidance and Counseling course, which is a pedagogical course. In order to determine the impact of the design on academic achievement and retention of students with different learning styles, she undertook an experimental study. The designed two modules based on student-centered instruction were implemented during six course hours in the treatment group consisting 55 students from the Department of Textile in the Faculty of Technical Education at Marmara University. Case study, cartoons, debate questions, and anecdotes were used in the modules. Activities performed every week and quizzes including 3 open-ended questions were used for students' assessment. In addition, an achievement test was administered as pre, post and retention test. The results showed that modular instruction was more effective on academic achievement and retention in favor of modular instruction. Moreover, students' learning style was determined by Grasha-Riechman Student Learning Style's Scale. When the test results were compared based on their learning style, it was found that the impact of modular instruction on achievement and retention was significant for all students with different learning style but especially in favor of the students with independent and collaborative learning style.

In another experimental study, student-centered instruction was taught to prospective teachers in the Department of Child Development and Preschool Teacher Education in the Faculty of Vocational Education at Gazi University, and then the extent to which their abilities in planning, implementation and assessment according to student centered instruction was ascertained (Ünver, 2002; Ünver & Demirel, 2004). Both qualitative and quantitative data collection tools including lesson plan evaluation scale, an observation form, an evaluation form for the characteristics of the practice school, a questionnaire for the evaluation of mentor teachers, interview with treatment group, an open-ended questionnaire for control group, journals, and portfolio were used. The first four weeks of the semester formed the preliminary study part of this research. Within these weeks, the students in both the experimental

and control groups prepared lesson plans and these plans were assessed. Then, these plans were implemented in the 3rd and 4th weeks and observed via observation forms. According to the results obtained during this period of time, needs were identified and the program that was planned to be implemented in the treatment group were revised based on these needs. The subsequent three weeks, student-centered instruction was taught to the students in the treatment group. The rest of the semester was left for teaching practice including preparation of lesson plans and implementation of these plans. Each week these plans were evaluated and teaching practices were observed. The results of the first plans were considered pretest and the last ones were posttest. According to the results gathered from both qualitative and quantitative methods, the students' skills regarding planning and implementing student-centered instruction were better in the treatment group compared to the control group. However, quantitative data showed that there was not significant difference between groups in terms of their abilities in assessing students according to student-centered instruction, while qualitative data indicated that the students in the treatment group were more competent than the others in this regard. Even though this study shows similarities with the current study in terms of determining needs, implementing a new strategy and evaluating the outcomes by comparing experimental and control groups, there was not any information regarding the identified needs, the modifications made in the student-centered instruction training program, and the scope of the program such as objectives, content, instructional methods and materials, and assessment.

Koç (2002) conducted an experimental study in order to determine the impact of the constructivist approach on cognitive and affective learning outcomes in Development and Learning course. This study was also carried out in the same context with that in Ünver's (2002) study. In the treatment groups, the course was taught based on constructivist approach and group works on problem solving and critical thinking activities were applied. In this study, basic and higher level of achievement tests and problem solving scenarios were administered as pretest, posttest and retention test. Additionally, qualitative methods including observations, interviews and journals were also used. In terms of the impact of the constructivist approach on affective development, the results showed that students in the constructivist classroom enjoyed the course much more, participated in activities

more willingly, demonstrated more confidence, showed greater cooperation, listened to and respected each others. Concerning cognitive development, it was observed that in both groups basic level learning gain scores were similar. That is, constructivist approach did not cause any difference in the students' basic level learning compared to traditional approach. This result did not differ in posttest and retention test results. However, it was realized that higher level learning gain scores, higher level posttest and retention test scores were significantly higher in the constructivist classroom than the traditional classroom. The similar result observed for the problem solving gain scores but not for its retention test. Besides these, according to the findings obtained from the journals and interviews, the most effective aspects of the constructivist approach were expressed as participating in original tasks, taking responsibilities, connecting new information with previous ones, examining the others' views, earning different perspectives, relating to real life, not being dependent on a single course book, and analyzing cases and problems instead of lecturing. Unlike Ünver's (2002) study, Koç (2002) explains the objectives, content, teaching-learning and assessment techniques of the course designed based on constructivist approach and even gives sample lesson plans. The striking missing part in this study compared to the current study is the needs assessment that could have been conducted prior to the design of the course based on constructivist approach.

2.3.4. Research on Curriculum Evaluation Conducted Abroad

Curriculum evaluation studies are so abundant in abroad that it is not possible to review all of them. Only those relevant to evaluation of teaching profession courses/programs will be discussed in this section. Next, although it was appeared that wide spread application of the CIPP model in various disciplines was a conspicuous aspect of the model (e.g., Moorman, 2002; Orthaganont, 2001), only the applications of the model in teacher training programs will be explained.

Darling-Hammond (2006) describes various measures used in the evaluation of the Stanford Teacher Education Program during five-year redesign process. These tools were comprised of perceptual data collection tools such as survey and interview, pretest and posttest of teaching knowledge, samples of students' work, a detailed rubric for longitudinal observation of clinical practice, observation of

graduates' teaching practice, and the Performance Assessment for California Teachers. On the one hand, she states pros and cons of each measure; on the other hand, she defends the use of multiple strategies in order to be able to enlighten an educational setting in teacher education as much as possible. Even, she mentions her desire to develop more powerful measures.

In his dissertation, Honaker (1995) studied perceptions of teachers toward the goals and requirements of teacher education programs in Utah. In addition to survey administered to teachers, documents of six teacher education institutions were analyzed. Teachers concurred that putting theory into practice is more important than acquiring theory and theory has supporting role in this respect. Therefore, it was recommended that teaching practice should be monitored attentively and incorporated into pedagogical courses such as instructional methods, educational psychology and specialized instruction.

Concerning evaluation of teacher education programs, Armstrong (2007) examined the effectiveness of the teacher education program at the University of Pittsburg at Bradford from program completers' points of view. In addition to interviews and document analysis, Armstrong Survey for Teacher Program Effectiveness was used in order to gather data from completers of elementary and secondary education programs. This instrument included 14 indicators of effective teacher education programs in terms of curriculum, instruction and professionalism. The respondents were asked to rate how important these domains are and how the teacher education program prepares them in these domains. Results revealed that completers concurred on the importance of these 14 domains for effective teacher education. However, they perceived the program moderately effective in preparing students for instruction, curriculum knowledge and professional development and for bridging theory and practice. The perceptions of the recent graduates after 2003 were more positive in this respect.

Vaughan (2001) examined effectiveness of the Clinical Instructor Program (CIP) which is an alternative approach to the supervision of student teachers. She evaluated the program in terms of its strengths and weaknesses, its cost-effectiveness, its achievements in meeting the standards of National Council for Accreditation of Teacher Education for field experiences and clinical practice, and its improvement for better instruction by using CIPP model. Data were collected from

63

former student teachers, clinical instructors/classroom teachers, elementary principals, and Mississippi State University (MSU) faculty by means of questionnaires, surveys and interviews. In order to get information about preexisting conditions and the rationale for the development of the program's training components and cost analysis, documents were analyzed and interviews were administered to MSU faculty at the context and input evaluation stage. Training components and cost analysis was realized at the input evaluation stage. For process evaluation, data were gathered from former student teachers, who participated in the CIP and completed a post students teaching evaluation form prior to graduation, and from clinical instructors, who completed a yearly summative evaluation. Concerning product evaluation, the researcher used the results of Mississippi Teacher Assessment Instrument and Student Teaching Assessment Instrument evaluation carried out during former student teachers' teaching experience, the results of questionnaires filled out by former student teachers, and the results of interviews with the selected group of former student teachers and clinical instructors. Regarding the improvement of the program, data obtained from surveys completed by MSU faculty and interviews with principals were analyzed. The study, overall, revealed mostly positive effects of the program such as empowerment of classroom teachers, more accurate evaluation, team approach, supportive learning environment, and cost effectiveness.

Richardson (1999) undertook a study in order to evaluate Education 231 Integrated Mathematics/Science Practicum course by means of CIPP model. Since the purpose was to evaluate the implementation and goal attainment of the course, process and product evaluation elements of CIPP model were taken into consideration in the study. Mixed method design was used and data were collected from preservice teachers, methods instructors, practicum coordinators, practicum supervisors, and ED231 administrative team. Also, documents including meeting notes documenting activities, instructor syllabi, preservice teachers' reflection guides, and preservice teachers' unit plans were examined. For the purpose of process evaluation, meeting notes and syllabi were analyzed missing points were completed via interviews with practicum coordinators, instructors, and administrative team. Demographic surveys, content survey, and pre-posttest practicum student survey were carried out. At product evaluation stage, unit plans and reflection guides

were examined, preservice teachers were observed and practicum supervisor survey was administered. The results showed that although there were some discrepancies, the program was almost implemented as intended and nearly half of the preservice teachers were able to design and deliver lesson plan as planned in the course.

Sarria (1997) examined the effectiveness of Facilitator-Collaborative-Reflective staff development training model for changing teachers' beliefs and practices, which are of importance for the change process. This model based on reflection, inquiry, and learning was evaluated through CIPP program evaluation model. In addition to baseline survey, qualitative methods such as case studies, focus group interviews and questionnaire comprising open-ended questions were administered to six middle school teachers. The results revealed that teachers practiced new strategies, received reflective feedback from the facilitator and made collaborative reflection on the implementation of new strategies.

Another Stufflebeam's CIPP model application was encountered in Bowling's (1988) dissertation. She evaluated an in-service training workshop for secondary vocational education teachers in relation to the assessment of handicapped students and individualized educational planning. For the context and input components of the model, she examined documents and revealed that teachers were in need of training about identification of handicapped students and preparation of individualized program planning. Upon these results, she organized a two-day in-service workshop and four-week consultation period. At process evaluation stage, data revealed that teachers had become more aware of handicapped students, appreciated the importance of the training and wanted to participate in additional trainings. Finally, the product evaluation stage displayed that the training and consultation achieved their intended purposes that teacher would refer handicapped students and participated in individualized program planning meetings for these students.

Peng (1995) used CIPP model for the purpose of developing an in-service training model for vocational high school automotive electronic technology teachers in Taiwan. At the context evaluation, teacher's background and needs regarding the technological changes in the automobile were determined and at the input evaluation, the program was developed. The teaching model under consideration was evaluated

in terms of effectiveness in the process evaluation and, finally, overall effectiveness of the in-service training model was evaluated at the last stage.

In sum, although various evaluation studies have been conducted regarding ongoing teacher education courses/programs in Turkey, those which are broad in scope have not been encountered frequently. Especially, impact evaluation is more emphasized rather than including needs assessment, context, input or process evaluation. Another deficiency in these studies is the lack of evaluation studies in relation to innovations or new programs/strategies/approaches instead of already existing ones. In this regard, experimental studies in which redesigned or newly designed courses are evaluated contributed to this study from the standpoint of implementing a redesigned course and evaluating this process. Moreover, this review showed that a full application of CIPP model has been observed mostly in international studies even though their number is not high. Therefore, the review of these international studies sheds light on the application of the model in this study.

2.3.5. Summary

The literature review exhibited that there is not any consensus on the definition of critical thinking. This leads to the appearance of different dimensions of critical thinking skills. In this study, because of being more detailed and comprehensive, Paul's critical thinking skill strategies was taken into consideration. The literature review implied that whatever dimensions or strategies of critical thinking are the matter under study, critical thinking based instruction is an effective way of promoting critical thinking skills and learning. However, how this instruction should be is a question in educators' minds. Two main ways are proposed: infusion and direct teaching. Although it is a controversial issue, there have been advocators and defenders of using infusion approach as to which critical thinking skills are embedded in course content and activities (e.g., Burden, 1998; Eggen & Kauchak, 2001; Johnson, 2000; Maclure, 1991; Zohar & Dori, 2003). It is asserted that this approach provides learning content and developing thinking skills effectively and concurrently. Related research conducted in Turkey and abroad generally also supports this claim. As the overall aim of this study was to raise the effectiveness of Development and Learning course in terms of promoting knowledge acquisition and fostering thinking, the infusion approach was applied.

In this regard, various active learning strategies/methods such as questioning, case studies, discussion, concept mapping, and educational plays have been suggested. Concerning assessment of students' achievement in critical thinking based instruction, it has been indicated that alternative assessment techniques/procedures should be taken into account in order for more precise and fair assessment. All these methods/techniques/procedures were considered in the redesign of the course.

While research conducted in Turkey and abroad, in general, support the effectiveness of critical thinking based instruction on learning and critical thinking, there are several studies that do not demonstrate evidences proving its effectiveness. These controversial and contradictory studies address the necessity of conducting more experimental studies. As for Turkey, experimental studies in this issue are scarce, especially within the scope of teacher education. Whereas teacher education contexts should have been learning environments that come first of all in mind of researchers because if it is anticipated that teachers are the implementers of critical thinking skills, prospective teachers are the persons that should firstly be trained in order for this purpose. On account of being newly recognized education aim, experimental studies on critical thinking based instruction would guide teachers, educators and researchers who aim to design and implement this instruction by incorporating it into courses. As well as implementing new teaching-learning strategies, evaluating effectiveness of these strategies, especially evaluating all processes starting with the identification of needs, continuing with the design of courses based on these strategies and ending with the implementation of the redesigned courses, is of value for all interested educators, who aim to improve their own programs as being equipped with new strategies and innovations.

Besides, experimental studies regarding critical thinking and evaluation showed that using multiple data sources including both qualitative and quantitative methods yield more data shedding light on the context where study is conducted. Since critical thinking based instruction is context-bound, description and enlightenment of educational context through various methods is of importance. Therefore, in this study, mixed designs including a variety of qualitative and quantitative methods were used.

On the other hand, even though there have been a vast amount of evaluation studies, the number of studies in which a comprehensive, well defined and structured

evaluations were undertaken was few, particularly in teacher education. Among evaluation models, Stufflebeam's CIPP model might be deemed a good match to these criteria. Besides being a comprehensive and systematic approach to evaluation, essential premise underlying this model is its focus on improvement rather than proof as stated by Stufflebeam (2003), "evaluation is … conceived primarily as a functional activity oriented in the long run to stimulating, aiding, and abetting efforts to strengthen and improve enterprises" (p. 4). Moreover, one of the most important issues, which make this model more advantageous over the other models, is that it allows the use of evaluation throughout the process of program development (Worthen & Sanders, 1987). Because of these reasons, this model was used in this study and it drew the frame of the research design of the study.

In spite of its advantages, a full application of the model in practice has not been encountered often. According to Hebel's (1987) very early analyses of the evaluation practices of 71 accredited teacher education institutions in USA, input and process evaluation stages of the CIPP model had drawn less attention because at that time these institutions had put more emphasis on planning (context evaluation) and recycling (product evaluation) decision. It is interesting to observe that the trend in the recent evaluation studies and research has not changed too much.

Overall, when these literature review results were combined, it is clear that a comprehensive study which evaluates needs, design, implementation and outcome of critical thinking based instruction incorporated into a course through multiple data collection tools would aid to close the deficiencies in this regard. In other words, the related literature supports the necessity and importance of the current study in teacher education.

CHAPTER III

METHOD

In this study, both qualitative and quantitative research methods were used to provide rich, detailed and reliable data. How these two methods were combined in the study will be explained in the following sections. Firstly, overall research design including the experimental design process will be mentioned. The researcher's role, research questions, hypotheses, data sources/participants and data collection instruments will be given in the following sections. Then, qualitative and quantitative data analysis procedures will be stated. The most important issue in research is to fulfill the internal validity of the research design. In the internal validity section, from both qualitative and quantitative points of view, what kinds of actions were taken and what points were taken into account will be clarified. Finally, limitations, delimitations and assumptions of the study will be pointed out.

3.1. Overall Research Design

This study aims to evaluate the needs, design, implementation and outcomes of Development and Learning course enriched with critical thinking based instruction. For this purpose, Stufflebeam's CIPP evaluation model was used. While the four types of evaluations in the CIPP model seem to be sequential, it is indicated that an evaluator does not have to undertake all of them and each evaluation can be conducted separately without depending on the preceding one (Fitzpatrick et al., 2004). However, in this study, all four components were carried out in sequence and the model was fully implemented. On the other hand, the CIPP model cannot be seen as a research design, it draws a framework for an evaluation study. Therefore, in light of this framework, different research designs were used for each component of the CIPP (context, input, process, and product). The applied designs are shown in Figure 3.

Furthermore, both quantitative and qualitative research methods were utilized throughout this study. While in the input and process evaluation components of the CIPP model, qualitative method was merely used, mixed methods including both qualitative and quantitative methods were applied in the context and product evaluation components.

McMillan and Schumacher (2001) mention three types of mixed methods of evaluation studies: complementary, developmental and expansion. The following Table 10 summarizes these three methods.

Table 10

The Three Types of Mixed Method Evaluation Studies

Type	Purpose
Complementary	To elaborate, enhance, illustrate and clarify the results of one method with another method.
Developmental	To use the results of one method to develop or inform the sampling or techniques for the second method.
Expansion	To extend the breadth and range of results by using different methods for different program components or questions.

Source: McMillan & Schumacher (2001, p.542).

In addition to these, Fraenkel and Wallen (2003) also explain three types of mixed-method designs: triangulation design, explanatory design, and exploratory design. In Triangulation design, both qualitative and quantitative data are collected simultaneously and results are compared for the validation purpose. In the explanatory design, firstly quantitative data are gathered, and then qualitative data are collected to clarify the results of quantitative data analysis. However in exploratory design, qualitative data are collected and the results are used in developing quantitative data collection tools. These designs have similar purpose to those given by McMillan and Schumacher. That is, complementary, developmental and expansion mixed methods are corresponding to explanatory, exploratory and triangulation designs, respectively.

The current evaluation study design covered explanatory (complementary) mixed design in the context and product evaluation part of the study. Since only qualitative methods were used, none of the mixed designs was applied in the input

and process evaluation. A detailed representation of the research design can be seen in Figure 3. For all types of evaluation, case study was carried out. Case study as a qualitative research design is to investigate one setting, a single subject, a single depository of documents or a particular event in detail (Yin, 1994). Case studies have three characteristics. These are focusing on a selected case/s, in-depth understanding of an issue and collecting data in different ways (Fitzpatrick et al., 2004). In this study, Development and Learning course was selected as the case. Moreover, since in each evaluation component of the CIPP model, different aspects of the course were taken into account, data collection tools varied from one component to the other. Besides these, in the context and product evaluation components, quantitative research designs along with case study were applied.

At the context evaluation stage, survey research design was carried out together with case study as a complementary mixed design. Survey research is defined as collecting information from a group of subjects in order to describe their opinions, attitudes, beliefs and the other characteristics by asking questions (Fraenkel & Wallen, 2003). In this evaluation, in order to identify needs regarding Development and Learning Course, data were collected from students and graduates by means of questionnaires and descriptive statistics were used to analyze the data. The needs would have been more clarified by a deep study. Thus, complementary to survey, individual interviews were carried out with an instructor, the vice chair of the department and an expert at MONE.

At the input evaluation stage, documents including syllabuses and textbooks regarding the course were analyzed. Resources of the faculty were determined. Based on the results the course was redesigned according to critical thinking based instruction.

Before implementing the redesigned course, students enrolled in Development and Learning course in 2006-2007 Fall semester were divided into four groups. In the Department of Accounting Education, there were two sections. Each section was divided into two within itself. Then, two sections were randomly assigned as the control, the other two as the treatment groups. On the other hand, random assignment of the students was not possible; thus, nonequivalent pre-post test quasi experimental design was applied. The instructional structure of the groups can be summarized as follows:

- The Control Groups: The existing instructional methods that have been used by the instructor for three years were applied in the control groups. While lecturing was the basic teaching method, questioning technique was also used sometimes. Moreover, in the last eight weeks when learning theories were taught, the students were asked to perform drama in groups. From the beginning of the semester, a follow-up test was given at the end of each session.

- The Treatment Groups: The redesign course enriched with critical thinking based instruction was implemented in the treatment groups. A variety of activities stimulating critical thinking such as questioning, case studies, worksheets for thinking skills, puzzle, role playing, etc. was used.

An achievement test was developed and administered to both groups as pretest at the beginning, posttest at the end and retention test 6 weeks after the semester was over. In addition, the California Critical Thinking Disposition Inventory (CCTDI) was also applied as pretest and posttest. Furthermore, throughout the course, the students in the treatment groups filled out a structured student journal each week.

For the purpose of the process evaluation, the structured student journals were analyzed by using qualitative content analysis method in order to evaluate the progress of the redesigned course. That is, qualitative data were just taken into account.

For the product evaluation stage, data obtained from the achievement pre and posttests, retention test and the CCTDI pre and posttests were statistically analyzed and compared between the treatment and control groups by means of Mixed Factorial ANOVA and ANCOVA in order to reveal impacts of the redesigned course on the students' achievement, retention and their critical thinking disposition. In addition, to enhance the results, focus group interviews were carried out with a group of the students from each treatment and control group and content analysis was used in the analysis of data gathered from these focus group interviews. The results yielded valuable information that addressed an advantage of the use of mixed design in evaluation studies.

EVALUATION MODEL ⇒	CONTEXT EVALUATION ⇒	INPUT EVALUATION ⇒	PROCESS EVALUATION ⇒	PRODUCT EVALUATION
Data analysis ⇒	Descriptive qualitative data analysis, Descriptive statistics	Documentary Analysis	Content Analysis	Mixed Factorial ANOVA & ANCOVA,Content Analysis
Instruments ⇒	Needs Assessment Questionnaires, Individual Interviews	Not applicable	Students' Journals	Achievement test, CCTDI, Focus Group Interviews
Data sources ⇒	Sophomore, Junior, and Senior Sts (2005-2006), Graduates, Vice Chair, Instructor, Expert at MONE	Documents (Syllabuses, text books)	Sophomore Sts (2006-2007)	Sophomore Sts (2006-2007)
Research Design ⇒	Case Study & Survey	Case Study	Case study	Case Study & Non Equivalent Group Pre-Posttest Design
Research Approach ⇒	Complementary/ Explanatory Mixed Design	Qualitative	Qualitative	Complementary/Explanatory Mixed Design
Purpose ⇒	Needs Assessment	Course Design	Course Implementation	Course Certification
Research Question ⇒	"What aspects of Development and Learning course need to be improved?"	"How can the course be designed according to critical thinking based instruction in the direction of meeting instructional needs of the students?"	"How well is this redesigned course being implemented from the students' point of view?"	"What is the impact of the redesigned course as compared to the existing one?"

Figure 3. Research design

3.2.   The Researcher's Role

The researcher was the implementer of the study; therefore she was involved in every stage of the evaluation. Furthermore, the researcher was the instructor of Development and Learning course before and after the course was designed according to critical thinking-based instruction.

The researcher has been teaching this course since 2002. At the same time, she started a PhD program on "Curriculum and Instruction" in the Middle East Technical University. Her knowledge gathered throughout the courses in the PhD program led her to think about the courses that she has been teaching. She has experienced that students had difficulty in understanding theories, especially learning theories. For this reason, she thought that some changes would be helpful on behalf of students. In 2004-2005 academic year, she decided to use drama as a teaching method. Students' reflections towards drama were so affirmative that drama has been used form the date onward in this course. However, dominant teaching strategy was direct instruction in the course.

Besides, the researcher is aware that there is always a need for improvement of programs or courses. Thereupon, she decided to undertake this evaluation research. The main purpose was to evaluate the course more systematically in order to identify needs, to redesign the course so as to meet the identified these needs, and to determine impacts of redesigned course as compared to the previous implementation. As a teaching strategy, critical thinking based instruction was selected. Because the researcher's observations in her classes and conversations with them pointed out that students were used to receive and memorize information directly given by instructors instead of thinking and understanding; and, in this regard, the related literature state that critical thinking based instruction provides better and deep understanding as opposed to rote learning (e.g., Beyer, 1988a; Burden & Williams, 1998; Costa, 1991a; Eggen & Kauchak, 2001; Grant, 1988; Johnson, 2000; Kincheloe & Weil, 2004; Maclure & Davies, 1991; Nisbet, 1993; Paul et al.,1989; Thompson, 1995). Consequently, she paid special attention to yield objective results; thus, she was very painstaking in collecting, analyzing, and interpreting data and making inferences.

3.3.   Research Questions

The main purpose of the study is to evaluate how the "Development and Learning" course can be improved with critical thinking based instruction and its impact on students' achievement as compared to the previous one by means of the CIPP evaluation model. The research questions of the study are grouped under each stage of the evaluation model.

<u>Context Evaluation</u>

4. The main research question for this component is "What aspects of Development and Learning course need to be improved?" The related questions are:

    1.6. What aspects of teacher education programs and Development and Learning course need to be improved according to the expert at MONE?

    1.7. What aspects of teacher education programs and Development and Learning course need to be improved according to the instructor who teaches pedagogical courses in the faculty?

    1.8. What aspects of the accounting teacher education program and pedagogical courses need to be improved according to the vice chair of the Department of Accounting Teacher Education?

    1.9. What are the needs regarding the objectives, content, teaching-learning process and assessment techniques of Development and Learning course according to the sophomore, junior and senior students who have already taken this course?

    1.10. What are the needs regarding the objectives, content, teaching-learning process and assessment techniques of Development and Learning course according to graduates who have been working as teachers?

<u>Input Evaluation</u>

5. The main question for this component is "how can Development and Learning course be designed according to critical thinking based instruction in the direction of meeting instructional needs of the students?" The related questions are:

2.6.   How can objectives of such a course be defined?

2.7.   How can the content of such a course be organized?

2.8.   What kind of teaching strategies can be used?

2.9.   What kind of materials can be used?

2.10. How can students' achievement be assessed in such a course?

Process Evaluation

a. The main research question for this component is "How well is this redesigned course being implemented from the students' points of view?" The related questions are:

   3.3.   What are the reactions of students towards the effectiveness of the implementation of the redesigned course?

   3.4.   Is there a need for revisions regarding the implementation of the redesigned course?

Product Evaluation

a. The main research question for this component is "What is the impact of the redesigned course as compared to the existing one (traditional instruction)?" The related questions are:

   4.1.   Is there a significant time difference among the students' mean scores on the pre, post achievement tests and retention test after controlling their Cumulative Grade Point Average (CGPA)?

   4.2.   Is there a significant mean difference between the traditional classroom instruction (control group) and critical thinking based instruction (treatment group) in terms of the students' learning after controlling their CGPA?

   4.3.   Is there a significant interaction effect between time and groups in terms of the students' learning after controlling their CGPA?

   4.4.   Is there a significant time difference between the California Critical Thinking Disposition Inventory (CCTDI) pretest and posttest mean scores of the students?

   4.5.   Is there a significant mean difference between the control and treatment groups in terms of the students' critical thinking disposition?

4.6. Is there a significant interaction effect between time and groups in terms of the students' critical thinking disposition?

4.7. What are the opinions of the students about the impact of the traditional course and critical thinking based course?

3.4. Hypotheses

The hypotheses were stated only for the research questions regarding the product evaluation stage of the study. The null hypotheses are given as follows.

4.1. There is not statistically significant time difference among the students' mean scores on the pre, post achievement tests and retention test after controlling their CGPA.

4.2. There is not statistically significant mean difference between the control and treatment groups in terms of the students' learning after controlling their CGPA.

4.3. There is not statistically significant interaction effect between time and groups in terms of the students' learning after controlling their CGPA.

4.4. There is not statistically significant time difference between the CCTDI pretest and posttest mean scores of the students.

4.5. There is not statistically significant mean difference between the control and treatment groups in terms of the students' critical thinking disposition.

4.6. There is not statistically significant interaction effect between time and groups in terms of the students' critical thinking disposition.

3.5. Data Sources

This study was carried out in the Faculty of Commerce and Tourism Education. This faculty has 3 active departments: Accounting Teacher Education Department, Tourism Management Teacher Education Department and Office Management Teacher Education Department. Instead of all, only students in the Accounting Teacher Education Program were involved, since all of its graduates have been appointed as teachers by the MONE until last year. In this department, the number of students is around 600 including grades 1 trough 4.

As an evaluation research, this study included both qualitative and quantitative research techniques together. Even though this made the study design and sampling procedure more complicated, these procedures made the study to be based on strong bases. In order to clarify the sampling procedure, this part was divided into subsections according to the CIPP model's components. In each component, different sampling methods, data collection tools and sources were used and different numbers of participants were involved. The data sources and the number of participants in each data collection tools are demonstrated in Table 11.

Table 11

Data Sources and Number of Participants

	Data Collection Tools								
	Questionnaire	Individual Interview	Focus Group Interview	Student Journal	Achievement Test (Pretest)	CCTDI (Pretest)	Achievement Test (Posttest)	CCTDI (Posttest)	Retention
Data Sources	Number of Participants								
Context Evaluation									
• Sophomore, Junior and Senior Students in the Accounting Teacher Education Program in 2005-2006 Academic Year	321			NA[*]	NA	NA	NA	NA	NA
• Graduates	28								
• Expert at MONE		1							
• Instructor in the Faculty		1							
• Vice Chair of the Department		1							
Input Evaluation									
• Syllabus samples	NA	NA		NA	NA	NA	NA	NA	NA
• Textbooks									
Process Evaluation									
• Sophomore Students in the Treatment Groups in 2006-2007 Academic Year	NA	NA		718	NA	NA	NA	NA	NA
Product Evaluation									
• Sophomore Students in both the Treatment and Control Groups in 2006-2007 Academic Year	NA		22	NA	156	146	174	166	135

[*] NA = not applicable

3.5.1. Context Evaluation

Actually, this was the needs assessment part of the study. At this stage, data sources involved external and internal stakeholders. Internal stakeholders were all sophomore, junior and senior students who were taking and who took the course in 2005-2006 academic year, the instructor who teaches pedagogical courses in the department and the vice chair of the department. External stakeholders were recent graduates of this department who graduated in 2004 and 2005 and work as a teacher currently and an expert at MONE, who has worked as an academician in universities and administrative personnel at MONE and had experiences in vocational teacher education.

Sophomore, Junior and Senior Students in the Department of Accounting Teacher Education in 2005-2006 Academic Year. A needs assessment instrument developed by the researcher was administered to these students who took the course before. While there were 462 students in total, 321 students responded to the needs assessment questionnaire. Characteristics of the students are given in Table 12.

Table 12

Characteristics of the Students

			n	%
Gender	Female		117	36
	Male		204	64
		Total	321	100
Age	Under 20		19	6
	20-21		122	40
	22-23		133	44
	24-25		24	8
	Above 25		5	2
		Total	303[*]	100
Grade level	Sophomore		130	41
	Junior		85	27
	Senior		103	32
		Total	318[*]	100
Grade taken from Development and Learning Course (as to the 4.00 scale)	AA-BA		117	39
	BB-CB		145	48
	CC-DC		36	12
	DD-FD-FF		-	-
	Pass (grade unknown)		5	2
		Total	303[*]	100

[*] Differences in total were caused by non-response to the particular questions.

As it can be seen from the table, of the students 36 % were female and 64 % were male. They were generally at around 20-23 years old. When the distribution of the students according to their grade level was examined, it was found that 41 % (n=130) were sophomore, 27 % (n=85) were junior and 32 % (n=103) were senior students.

Graduates. In addition to the undergraduate students, graduates appointed as teachers were also involved in this stage of the study. It was assumed that graduates who are actively teaching might have become more aware of the role of teaching skills developed during undergraduate study and they would address the needs more consciously. Since it was not possible to reach all graduates, only individuals accessible for the study were involved. That is, convenience-sampling method was utilized, in which a group of subjects are selected on the basis of being accessible (McMillan & Schumacher, 2001). A needs assessment questionnaire for them was also developed. The graduates, who are teachers in vocational high schools, had constructed an e-mail group. The researcher joined the e- mail list of the group, and sent them the questionnaire by this e-mail list. Unfortunately, only 28 graduates whose characteristics are summarized in Table 13 responded the questionnaire.

These graduates were mainly novice teachers with one (57%) and two years (43%) of experience. Gender distribution of the graduates was similar to the undergraduate students. Males constituted 61 % of the graduates. The distribution also showed that more than half of the graduates were around 23-24 years of age.

Table 13

Characteristics of the Graduates

			n	%
Gender	Female		11	39
	Male		17	61
		Total	28	100
Age	21-22		3	11
	23-24		18	64
	25-26		6	21
	27+		1	4
		Total	28	100
Teaching Experience	1		16	57
	2		12	43
		Total	28	100

The Instructor, Expert at MONE and The Vice Chair of the Department. There were interviews with an instructor and the vice chair of the Department and an expert at MONE. Since in the faculty there is one instructor other than the researcher, who teaches pedagogy courses and holds a degree in educational sciences, he was selected for the interview. The expert from MONE was the one with educational sciences and vocational education background who could give information about Development and Learning course. Also, it was intended to interview with the chair of the department but since he was not available, the interview was carried out with the vice chair of the department.

3.5.2. Input Evaluation

Documents comprising syllabuses and textbooks regarding Development and Learning course were reviewed. Available resources in the faculty were determined. Then, the course was redesigned according to critical thinking based instruction with the intention that it would meet the instructional needs revealed in the Context Evaluation.

3.5.3. Process Evaluation

The Students in the Treatment Groups. In this stage, a quasi experimental design was applied in the Fall semester of the 2006-2007 academic year. For this reason, the treatment and control groups were constructed as mentioned in the former sections. In fact, two sections of the Department of Accounting Education were opened for the enrollment to Development and Learning course by the Office of the Student Affairs. Since around 90 students were expected to enroll in each section, division of each section into two groups was required. By the permission of the Vice Dean, this division was actualized so that four groups were formed. Two of them were randomly assigned as the treatment and the others were assigned as the control groups. Yet, random assignment of the students to the groups could not be achieved because students are enrolled in the course via computerized system, based on their identity number that does not allow for random allocation of students to the sections. Then, throughout 14 weeks semester, the redesigned course was implemented in the treatment groups and traditional methods of the instruction were implemented in the control groups. The distribution of the students assigned into the groups is given in

Table 14. In total, 176 students enrolled in the course. Of them, 92 were in section 1 and 84 were in section 2. After division, there were finally 89 students in the treatment groups and 87 in the control groups.

Table 14

Distribution of the Students into the Groups

	n	*%*
Treatment 1 (Section 1)	47	27
Treatment 2 (Section 2)	42	24
Treatment Total	89	51
Control 1 (Section 1)	45	25
Control 2 (Section 2)	42	24
Control Total	87	49
Total	176	100

At the process evaluation stage, the redesigned course implemented during 2006-2007 Fall semester was evaluated. Because the process evaluation included the evaluation of the redesigned course carried out in the treatment groups, only students in the treatment groups were involved. They were asked to fill out a student journal each week; therefore, the number of the collected student journals during the semester was 718 in total.

3.5.4. Product Evaluation

The Students in Both the Treatment and Control Groups. In this stage, an achievement test was administered to all students in both the treatment and control groups at the beginning and at the end of the course. Moreover, this test was conducted as a retention test 6 weeks after the semester was over. In the pretest, 156 students participated in the pretest, 174 students participated in the posttest and 135 students took the retention test. The posttest was applied as a final exam, so all enrolled students took the test. However, when the retention test was administered, only students who were in the class at the test time participated in the test; thus, 39 mortalities were observed. In the Table 15, the distribution of the students into the groups is presented. The results showed that almost equal number of the student from the treatment and control groups participated in the tests (83 vs. 73 in the pretest, 87 vs. 87 in the posttest and 66 vs. 69 in the retention test, respectively).

Table 15

Distribution of the Students Who Took Pretest, Posttest and Retention Test

Test type	Groups	*n*	*%*
Pretest	Treatment 1	44	28
	Treatment 2	39	25
	Control 1	36	23
	Control 2	37	24
	Total	156	100
Posttest	Treatment 1	46	26
	Treatment 2	41	24
	Control 1	45	26
	Control 2	42	24
	Total	174	100
Retention test	Treatment 1	34	25
	Treatment 2	32	24
	Control 1	33	24
	Control 2	36	27
	Total	135	100

In addition, the CCTDI was administered to all students as pre- and posttest. 146 students participated in the pretest and 166 students in the posttest. In Table 16, the groups of the students are presented.

Table 16

Distribution of the Students Participated in the Pretest and Posttest of the CCTDI

Test type	Groups	*n*	*%*
Pretest	Treatment 1	42	29
	Treatment 2	41	28
	Control 1	39	27
	Control 2	24	16
	Total	146	100
Posttest	Treatment 1	46	28
	Treatment 2	38	23
	Control 1	44	26
	Control 2	38	23
	Total	166	100

In addition to these tests, focus group interviews were conducted with the students in both the control and treatment groups. These students were selected by using the maximum variation sampling method. The students' gender (male-female)

and CGPA scores (low, middle, high) were taken into consideration in the selection. Based on this criteria, 6 students from each subgroup (treatment 1 & 2 and control 1 & 2), which was 24 in total, were determined randomly. However, all of the selected students were informed to participate in the interviews but 2 of them did not participate. Thus, the interviews were actualized with 22 students in total. The distribution of the students by groups, gender and CGPA is presented in Table 17.

Table 17

Distribution of the Students by Their Groups, Gender and CGPA

	Treatment Group 1	Treatment Group 2	Control Group 1	Control Group 2	Total
Gender					
Male	3	2	2	3	10
Female	3	3	3	3	12
Total	6	5	5	6	22
CGPA					
Low	2	1	2	2	7
Middle	2	2	2	2	8
High	2	2	1	2	7
Total	6	5	5	6	22

3.6.   Data Collection Instruments and Procedures

Multiple data collection instruments were used. At each stage of evaluation, except for the input and process evaluation, both qualitative and quantitative data collection methods were utilized. Data collection procedure and timetable are presented in Table 18.

Table 18

Data Collection Procedure and Time Table

	2005 May to December	2006 January to June	2006 June to September	2006 August to September	2006 September to December	2006 May to September	2006 September	2006 December –2007 January	2007 March
	CONTEXT EVALUATION		INPUT EVALUATION	PROCESS EVALUATION		PRODUCT EVALUATION			
QUANTITATIVE	Development of NA Quest. & Pilot test	Administration of NA Quest. Sophomore (130) Junior (85) Senior (103) Graduates (28)				Development of Achievement test & Pilot test	Pretest of Achievement Test & CCTDI Sophomore (156-Ach. & 146-CCTDI)	Posttest of Achievement Test & CCTDI Sophomore (174-Ach. & 166-CCTDI)	Retention test Sophomore (135)
QUALITATIVE	Development of Interview questions	Administration of Interview MONE (1) Vice chair (1) Instructor (1)	Documents (Syllabuses, Textbooks)	Development of Student Jounral	Administration of Student Journals Sophomore (718)	Development of focus group interview questions		Administration of focus group interviews Sophomore (22)	

85

3.6.1. Context Evaluation

Two data collection procedures were used in the context evaluation stage; the needs assessment questionnaire and individual interviews. Each of these procedures is explained respectively.

Needs Assessment Questionnaire for Students. A needs assessment questionnaire specific to Development and Learning course was developed to determine needs and expectations of the students who took the course (see Appendix A for the questionnaire). All aspects of the course, which are the course objectives, content, teaching-learning process and assessment procedures were taken into account in the preparation of the questionnaire. It includes four main parts. The first part was left for general information. The second part was devoted to statements about the course objectives. This part was comprised of 57 objectives and the students were asked to indicate "how important attaining these objectives and gaining skills are" and "how competent they feel in the skills stated in the objectives." A five-point likert scale was used for each question (1=not important, 2=little important, 3=undecided, 4=important, 5=very important and 1=not competent, 2=little competent, 3=undecided, 4=competent, 5=very competent, repectively). The objectives herein were prepared in detail for each topic in the course content including physical development to moral development, behavioristic to cognitive learning theories and motivation topics. In this way, it was possible to get idea about not only which objectives were important but also which content should be covered in the course.

The third part was related to the teaching-learning process of the course. In this part, in-and out-class activities and strategies were supplied. These activities included common activities encountered generally in any ordinary class but activities promoting thinking skills determined based on literature were also included. Then, the students, who have already taken this course, were asked to state "to what extent the given activities took place in the class" and "to what degree these activities were important for learning." The purpose for asking these questions was to determine which activities should be involved in the course from their points of view. Similar to the 2nd part, in this part a five-point scale was used (1=never, 2=rarely, 3=sometimes, 4=often, 5=always in the statements related to the frequency of the

activities and 1=not effective, 2=little effective, 3=neutral, 4=effective, 5=very effective) in the statements related to the effectiveness of the activities in learning.

The last part of the needs assessment questionnaire included items related to the types of assessment procedures students would prefer in this course. According to the student assessment and grading regulations of Gazi University, students are assessed based on their midterm and final score. However, it is possible to use various methods/procedures for midterm and final grade. Therefore, in this part, students' preferences toward assessment procedures were asked for both midterm and final.

After the questionnaire was developed based on the abovementioned steps it was reviewed by six instructors in the field of Educational Sciences in order to assure for face validity of the instrument. In addition, six students were also asked to read and comment on the clarity and understandability of the items in the questionnaire. For the purpose of pilot test, after having been revised based on the instructors' and students' opinions the final form was built and administered to the sophomore, junior and senior students in the other departments in the faculty (i.e., the Departments of Office Management Education and Tourism Management Education). In total, 304 students participated. Characteristics of the students are given in Table 19.

Table 19

Characteristics of the Students Participated in the Pilot Test of the Needs Assessment Questionnaire

			n	*%*
Gender	Female		198	65
	Male		106	35
		Total	304	100
Department	Office management		142	47
	Tourism management		162	53
		Total	304	100
Grade level	Sophomore		98	32
	Junior		93	31
	Senior		113	37
		Total	304	100

In order to check the reliability of the test, Cronbach α as a reliability coefficient was calculated. Since in the questionnaire there were two main parts including two subscales within self, reliability estimates for each of them were

calculated separately. For the subscales in the second part, Cronbach-α coefficients were found .94 and .97, respectively and for the subscales in the third part, they were equal to .94 for both. After reliability analysis, the final form was applied to the sophomore, junior and senior students in the department in 2005-2006 Spring semester.

Needs Assessment Questionnaire for Graduates. The needs assessment questionnaire for students was adapted to graduates so as to identify needs in relation to objective, content, teaching-learning process and assessment techniques from the graduates' points of view (see Appendix B for the questionnaire). In the third part of the former needs assessment questionnaire prepared for the undergraduates, the question that "how often the activities took place in the course" was removed and changed into "to what degree, the activities are effective in improving thinking skills" was added. The questionnaire was sent to the graduates via e-mail since it was not possible to access them in other ways. Like the needs assessment questionnaire for undergraduates, regarding the course objectives and teaching-learning process there were two main sections including two subscales. The reliability coefficients for the subscales in the former one were found .96 and .98 and for those in the latter one, the coefficients were .94 and .95, respectively.

Structured interview. Structured interviews were carried out with the expert from MONE, the instructor in the faculty and the vice chair of the department. The main purpose was to determine goals of teacher education programs and instructional goals of Development and Learning course and to identify expectations, current problems and needs regarding teacher education programs and the course from their points of view. Four instructors reviewed interview questions prepared for each interviewee and based on their comments, the questions were revised (see Appendix C, D & E for the interview questions). To the expert and instructor, their opinions about objectives, needs, expectations and recommendations regarding teacher education and Development and Learning course were asked. To the vice chair of the department, her opinions about teacher education in general, her expectations from Accounting Teacher Education program, and her thoughts about pedagogy courses and suggestions were asked. Since she was from Accounting field, detailed questions about Development and Learning course were not directed.

3.6.2. Input Evaluation

In this stage syllabuses and textbook related to the course and the faculty resources were examined so as to design Development and Learning course according to critical thinking based instruction.

3.6.3. Process Evaluation

Student journals. Journals have been used as a method for reflection on learning. Reflective learning causes students to think about their learning; thus it provides feedback to instructors about both students' progress and course progress (Abbas & Gilmer, 1997; Burbach et al., 2004; Langer, 2002). Janesick (2004b) also claims that journal writing promotes critical thinking skills and provides a communication tool between the teacher and the learner.

Langer (2002) explains three types of learning journals: unstructured, structured and dialog journals. In unstructured journals, students use their own writing style and format like diary but this makes journal comparison among students difficult. Whereas, structured journals, which is designed in advance are more beneficial for both instructors and students. Students follow the given format simply and instructors can easily compare students and evaluate students' reflections in terms of their learning and lesson's progress. Besides these, dialog journal is defined as a communication tool between students and teacher.

In the current study, the students in the treatment groups were assigned to write journals to get their feedback about the course progress and their progress at the end of each session. Because of its easiness, structured journal type was preferred. A standard journal form was prepared by adapting it from Koç (2002). 9 questions were asked. It starts with a question related to what they learned and what important points of the topic were. Clarity of topics and effectiveness of the activities in learning and in using thinking skills were then asked. This is followed by their reflections on their learning and on their success. Finally, their opinions and suggestions for providing better instruction and learning and overcoming difficulties were asked. Then it was reviewed by two instructors and given to the students in the treatment group (see Appendix F for Student Journal).

3.6.4. Product Evaluation

<u>Achievement Test.</u> At the beginning and end of the course, an achievement test was given to the students in both the treatment and control groups in order to see their development from pretest to posttest and differences between groups. Moreover, this test was applied to the same group of students 6 weeks after the course was over to test retention of students' knowledge regarding the course.

The achievement test included 40 multiple-choice questions. For preparation of the test, a table of specification was formed indicating the course objectives that would be evaluated. First of all, by task analysis, all topics were outlined and then objectives were determined under each topic (see Appendix G). Then, the objectives were classified according to the topics and table of specification (see Appendix H) was constructed.

Based on the table of specification five alternatives multiple choice test questions were developed for each objective. The test was reviewed by four instructors who are from the field of educational sciences and have been teaching/had taught Development and Learning course. Then, the test was administered to 171 junior students who have already taken the course for the piloting purposes. The item analyses were carried out by means of ITEMAN software. The results are given in the Appendix I. As it can be seen from the table in the Appendix I, discrimination indices of 28 questions were equal or higher than 0.30, 9 questions' discrimination indices were between 0.20 and 0.30, and only 3 questions' indices were less than 0.20. According to the criteria set by Crocker and Algina (cited in Baykul, 2000), the questions with discrimination indices higher than .30 were hold in the test. The questions with indices between .20 and .30 were revised, and those with indices less than .20 were replaced by new questions. The reliability of the final test, Kuder Richardson (KR)-20, was found .64 which is not high enough according to the criteria which is .70 as the modest value (McMillan & Schumacker, 2001; Nunnally & Bernstein, 1994). Thereupon, the reasons of this low reliability estimate were searched.

There are some reasons that affect reliability of the test like homogeneity of the groups (Pedhazur & Schmelkin, 1991; Baykul, 2000). For testing group homogeneity, Roberts, Onwuegbuzie, and Eby (2001) propose a new statistics in

order to measure how far the data is from homogeneity. The formula is given as follows;

$$\alpha_{ROE} = \frac{1}{N} \sum_{i=1}^{N} \left(\frac{a_i - b_i}{n_i} \right)^2$$

where N is the number of test items, a_i is the number of students who answered i^{th} item correctly, b_i is the number of students who answered i^{th} item incorrectly, n_i is the number of respondents to each item. $\alpha_{ROE} = 1$ means perfect homogeneity of the data set and $\alpha_{ROE} = 0$ indicates perfect heterogeneity. For the achievement test used in this study, α_{ROE} was found 0,18. Since this value is close to 0, it indicates that only18 percent of the lack of total test score variance is due to the groups' homogeneity. Therefore, it was concluded that reliability coefficient of the achievement test was not affected seriously by the group homogeneity.

Another important factor affecting reliability is the number of test item. In this study, since all treatment condition was applied to the whole course, all topics and objectives were covered in the achievement test. Nine objectives and 11 topics were identified and by relating both sides 160 behaviors were determined for the course (see Table of Specification). However, since exam time and students' reactions were taken into account, it was not possible to measure all behaviors with a single instrument. Thus, this number was decreased to 40 by considering weight of each objective so none of the objectives and topics was left outside of the test. On the other hand, 40 items may not be representative enough for 160 behaviors. For this reason, measuring the attainment of the course's cognitive behaviors with a 40-item single test might have resulted in low reliability. Consequently, since reliability coefficient was evaluated not too low to be rejected even this value is in an acceptable interval according to Linn and Gronlund (2005) and Özdamar (1997), the final form (see Appendix J) was decided to be administered to the groups.

In addition to pre- and post test, the same achievement test was applied to the same students 6 weeks later than the posttest. The aim was to measure the impact of the redesigned course on the retention of knowledge.

California Critical Thinking Disposition Inventory (CCDTI). This inventory was developed based on the results of The Delphi Report in which critical thinking and disposition toward critical thinking were conceptualized by a group of critical

thinking experts (Facione, 1990). The original CCTDI includes 75 items loaded on seven constructs. These are inquisitiveness, open-mindedness, systematicity, analyticity, truth-seeking, critical thinking self-confidence, and maturity. Briefly, the *inquisitiveness* construct including 10 items that measures one's intellectual curiosity and one's desire for learning without considering any profit. The *open-mindedness* construct contains 12 items that measures being tolerant of divergent views and sensitive to the possibility of one's own bias. The *systematicity* construct comprised of 11 items, and it measures how a person is organized, orderly, focused, and diligent in inquiry. The *analyticity* construct involving 11 items addresses the application of reasoning and the use of evidence to resolve problems. The *truth-seeking* construct including 12 items measures the disposition of being eager to seek the best knowledge in a given context, courageous about asking questions, and honest and objective about following inquiry. The *critical thinking self-confidence* construct consisting of 10 items measures the trust the soundness of one's own reasoning processes. Finally, the *maturity* construct involving 10 items measures cognitive maturity and the disposition to be judicious in one's decision-making (Facione, Sánchez (Giancarlo), Facione & Gainen, 1995; Kökdemir, 2003;).

Kökdemir (2003) carried out an adaptation study to transform this inventory into Turkish version because of cultural concerns. After all items were translated into Turkish by eight persons including six psychologists, a simultaneous translator and the researcher himself, it was administered to 913 students in the Faculty of Economic and Administrative Sciences. Firstly, item-total score correlations were estimated and 19 items whose correlation under .20 was eliminated from the scale. Factor analysis was performed on the reduced scale. His study revealed that five items had lower factor loadings than .32 and items under open-mindedness and maturity constructs were loaded on one construct. Finally, 51 items with six constructs were kept in the scale (see Appendix K). Reliability of the whole scale was found .88. Reliability coefficients of each subscale ranged from .61 to .78.

In this study, this scale was administered to the students in the treatment and control groups. The reliability estimate of the scale was .65 for pretest and .76 for posttest. However, a consistency among subscales' reliability coefficients could not be found because it ranged from .05 to .77 for pretest and .23 to .80 for posttest. The unreliable subscales were *truthseeking* and *systematicity* subscales for both pretest

and posttest. For this reason, the analyses regarding the CCTDI were carried out based on the students' total scores on the inventory; subscale analyses were not conducted.

Focus Group Interview. By the end of the course, in order to evaluate the effectiveness of all aspects of the course from the students' points of view, the sophomore students in both the treatment and control groups were interviewed.

Focus group interview was preferred because of its advantages over one-to-one interview. Focus group interview provides less stressful environment and natural atmosphere than one-to-one interviews. In such cases, persons in the group listen to others' opinions and comments, these opinions or comments affect the others' idea and cause them to realize another point of view that they have not realized. For this reason, in focus group interviews, rich and detailed information can be obtained and interviewing reaches its goal. In addition to these, it is indicated that since the findings are more believable in focus group interviews so face validity of the results are high. Low cost, quick results and reaching more people at one time are the other advantages (Marshall & Rossman, 1999; Yıldırım & Şimşek, 2003).

Besides these, there are disadvantages as well. The most important one is the control of persons. Sometimes, interview can wander from the main topic. At these times, interviewee's role gains importance. As a precaution, structured open-ended questions were asked one by one. Moreover, some questions were further clarified for better understanding; in order to understand their meaning, further probing questions were asked; and when they wanted to say something, they were let to speak. But in spite of these, focusing on the questions could be achieved. This semi-structured interview was preferred since it provides comparison of responses across student and groups and it decreases bias and subjectivity encountered in unstructured interviews (Bogdan & Biklen, 1998; Yıldırım & Şimşek, 2003).

In these interviews, first of all, warm-up questions were asked. These were "Which high school did they graduate?", "Why did they choose this faculty?", "Do they want to be a teacher? Why?", "Do they think that Development and Learning course is beneficial for teaching profession? Why?". Then, more detailed questions about the course were asked like their expectations from the course, the degree to which their expectations were met and reasons, contribution of the course, their opinions about the content, their competency in the course, teaching-learning

93

process, instructional materials and assessment techniques. In addition, impact of the course on their thinking was asked. These questions were reviewed by 4 instructors and based on their suggestions, some parts were revised. Then, the final form of the questions was administered to the selected students in each group (see Appendix L). All responses were tape-recorded and transcribed.

3.7. Data Analysis

The use of both qualitative and quantitative methods entails relevant data analysis procedures. Therefore, in this section qualitative and quantitative data analyses will be explained

3.7.1. Analysis of Quantitative Data

Descriptive statistical analysis was used for all data gathered from the questionnaires. Mean, median, mode and percentage distribution of data gathered from the questionnaires were calculated in order to exhibit the distribution of data.

Concerning the CCTDI, for testing pretest and posttest mean differences between the treatment and control groups, Mixed Factorial ANOVA analysis was conducted because Mixed Factorial ANOVA provides testing mean differences between-group and within repeated-measures at the same time (Field, 2005). That is, between group (i.e., treatment and control groups) and within group differences on repeated measures (i.e., pretest and posttest) can be tested simultaneously.

Moreover, for determining mean differences between and within the groups in terms of the students' progress from the achievement pretest to posttest and from the achievement posttest to the retention test, Mixed Factorial ANCOVA was used. Since nonequivalent groups were compared, in order to eliminate the effect of the students' CGPA scores, CGPA variable was treated as a covariate in the analysis. For all quantitative data analyses, SPSS 15.0 was used.

3.7.2. Analysis of Qualitative Data

While there are various qualitative data analysis approaches, Yıldırım and Şimşek (2003) group them into two ways: descriptive and content analysis. In this study, descriptive analysis was utilized for analyzing data gathered from individual interviews with the instructor, the vice chair of the department and an expert at

94

MONE. According to descriptive analysis, a thematic framework was formed in line with the research questions, data were reviewed in accordance with the framework, and then findings were presented in a narrative way and illustrated by quotations.

On the other hand, in order to analyze the data obtained through focus group interviews and journals, content analysis was used. The purpose of the content analysis was to reveal the underlying issues and themes about issues. The content analysis process was introduced below by following the procedure explained by Yıldırım and Şimşek (2003).

1. Coding the data. First step was coding the data obtained from interviews. Data was scrutinized, keeping the conceptual framework of the study and research questions in mind. When reading through the data, places, which seem to be important, was identified and a code (name) was given. In determining codes, inductive coding method was followed; codes describing the data were generated after data was reviewed and a list of codes was developed in this way.

2. Generating Themes from codes. The codes were reviewed again and related codes were classified into broader categories. That is, themes yielded by related codes were determined. In this way, themes and codes were listed.

3. Organization and Description of Codes and Themes. After codes and themes were determined, they were organized in a meaningful manner by taking research questions of the study into consideration.

3.8. Internal Validity

Fraenkel and Wallen (2003) describe internal validity that "observed differences on the dependent variable are directly related to the independent variable, and not due to some other unintended variable" (p.178). There are a variety of threats to internal validity which stemmed from subject characteristics, mortality of subjects, location, instrumentation, maturation, history, regression, etc. In this section, possible threats and solutions to overcome these threats were explained in order to yield accurate results.

3.8.1. Internal Validity of Quantitative Stage

Some courses of actions were taken to prevent internal validity threats to the quantitative part of the research design.

In order to decrease the effect of *selection threat* in the quasi-experimental design of the study, Mixed ANCOVA analysis was used. Selection threat appears when the subjects are not randomly assigned into the groups like in this study. In this case, students' characteristics might affect the results. Therefore, to reduce students' characteristics impact on the results at least in terms of academic achievement, CGPA of the students was taken as a covariate in Mixed ANCOVA so that its effect was controlled.

Use of pretest in the study might have caused students to remember questions, work on those questions and get high grade on the posttest. This is called as *testing or pretesting threat* (Freankel & Wallen, 2003; McMillan & Schumacher, 2001; Pedhazur & Schmelkin, 1991). Since pretest and posttest were administered at the beginning and end of the semester respectively, the time between tests was long enough to prevent this problem.

For preventing *the diffusion of treatment*, which is the impact of the treatment on the control group (McMillan & Schumacher, 2001), the other class (control group) could have been not informed about the treatment. However, since the groups were from the same department, they were attending the other courses together. Therefore, in a short time the students in the control groups would have realized what was happening in the treatment groups. That is, it was not possible to conceal the treatment. Thus, all students were informed at the beginning about the treatment. However, since lots of activities were carried out in the classes for the treatment groups, the other students in the control groups were aware of them but they were not allowed to come in the treatment classes and participate in those activities. In this way, effect of the treatment on the control groups were strived to be averted.

Moreover, to handle *implementation threat*, which is implementation of the treatment by different instructor or instructors' bias behaviors in treatment groups to get intended results, the researcher was the only instructor in all groups (Freankel & Wallen, 2003). Regarding the researcher's impact on the results, a justification was given in the "The Researcher Role" part.

Another internal validity threat is *location*, which means treatment application or data collection conditions (Freankel & Wallen, 2003). Similar classes with same equipments were arranged at the beginning and all students took data collection tool in the similar conditions. However, during semester, a few problems

were encountered in the treatment group classes. For example, since the electricity was gone or the projector in the class did not work, slides and movie could not be shown in one of the treatment groups. At that time case study was analyzed, this movie was shown in the next week and a photocopy of slides was left for them to copy.

Throughout the course implementation, one of the most significant factors that might have affected the study results might be *the attitude of the participants*. This threat towards internal validity is explained that subjects in the treatment groups may have positive attitude to the course because of being treated differently and may be more motivated to study much more and get higher grades (Freankel & Wallen, 2003). On the other hand, in this study at the beginning the students in the treatment group reacted negatively to the activities. They thought that they were forced to do these activities and they were sometimes exhausted. This resistance to change might have negative impact on the study progress but then their reactions changed in a positive way.

3.8.2. Internal Validity of Qualitative Stage

There are several procedures that can be applied in qualitative research to handle internal validity concerns of the study. In this part, some of them taken into consideration were explained.

Triangulation is one of the validity procedures which is proposed especially in increasing credibility of qualitative studies (Creswell & Miller, 2000). Since, throughout this study both qualitative and quantitative data collection instruments were used together either as a complementary or as an expansion of the results, the validity concern of the results was strived to be handled by means of triangulation approach.

Disconfirming evidences is the process where investigators first establish the preliminary themes or categories in a study and then search through the data for an evidence that is consistent with or disconfirms these themes (Creswell & Miller, 2000). In content analysis of the qualitative data of the study, not only data supporting themes and codes but also other negative evidences were also taken into account.

A rich description, which is another procedure for establishing credibility in a study, is to describe the setting, the participants, and the themes of a qualitative study in rich detail. The purpose of a thick description is to provide understandability of the study so that readers can evaluate the results objectively. Rich description also enables readers to make decisions about the applicability of the findings to other settings or similar contexts (Creswell & Miller, 2000; LeCompte & Goetz, 1982). Thus, all process of the research design and all results were explained in detail.

Another procedure proposed by Creswell and Miller (2000) is the *disclosure of researcher role*, assumptions, beliefs and biases. Researcher acknowledges and describes her/his beliefs and biases early in the research process so that she/he provides readers to understand her/his positions throughout the study. At the beginning of the chapter, a part was left to "The Researcher Role", since the researcher herself was implementer and coordinator of the study.

3.9.   Limitations and Delimitations

There are some limitations in this study. One of the limitations that could not be controlled in the study is random assignment of the students into the groups. Other limitations were the students' characteristics and their thinking skills level. Intensity of other courses that the students took at the same semester together with this course was another limitation. In addition, the implementation of the redesigned Development and Learning course by the researcher herself was another limitation of the study.

Besides limitations, one of the delimitations set by the researcher was about the selection of the course and context. Instead of conducting this study on teacher training programs in teacher education faculties, the scope was limited to Development and Learning course taught in the Faculty of Commerce and Tourism Education. Therefore, the results cannot be generalized to the programs neither in this faculty nor in other faculties.

The main focus of the study was limited to examine the impact of critical thinking based instruction on learning rather than improving critical thinking. Therefore, the acquisition of content knowledge was more emphasized; direct teaching of critical thinking skills was not exactly appeared because the content load

98

of this course did not allow time for teaching these skills. Only activities were used as a means for this purpose.

Final delimitation was that while needs assessment part of the study yielded various needs, this study focused on the needs leading to the development of the course based on critical thinking skill because of time limitation.

3.10. Assumptions

1. The respondents were objective and honest in answering the questions asked in the tests, questionnaires, interviews and journals.
2. The respondents-students and graduates- have developed appropriate insight into the basic knowledge and skills regarding development and learning.
3. The respondents-students and graduates- who had already taken the course recall the course with acceptable clarity.
4. Variables that could not be controlled affected the students in the treatment and control groups in the same way.

CHAPTER IV

RESULTS

The purpose of the study was to evaluate the needs, design, implementation and outcomes of the "Development and Learning" course enriched with critical thinking–based instruction within the teacher education program in the Faculty of Commerce and Tourism Education in Gazi University was evaluated by using Stufflebeam's CIPP (Context, Input, Process, and Product) evaluation model. In line with this purpose, this study was framed by the following main research questions:

1. What aspects of Development and Learning course need to be improved?
2. How can Development and Learning course be designed according to critical thinking based instruction in the direction of meeting instructional needs of the students?
3. How is this redesigned course being implemented?
4. What is the impact of the redesigned course?

In order to seek answers to these questions, various instruments through which data were collected from different sources were used.

In this part, findings obtained from qualitative and quantitative data throughout the research process were presented in accordance with the main research questions determined separately for each stage of the course evaluation process. Therefore, results were given under four main sections; context, input, process, and product evaluation, respectively. There were also subheadings under these sections regarding each main and subsidiary research questions. While qualitative data analysis results were explained based on the themes emerged from the analyses, only those obtained from interviews with the vice chair, instructor and expert at MONE were presented descriptively. Concerning quantitative data, results were explained based on descriptive and inferential statistical analysis.

4.1.   Results on Context Evaluation

The first research question covers the first element of Stufflebeam's CIPP model; context evaluation in which needs, problems, assets, and opportunities are assessed in order to determine goals and priorities of a program or a course (Stufflebeam, 2000, 2003). Accordingly, needs assessment study was conducted in this stage in order to find out answers to the research question, "what aspects of Development and Learning course need to be improved?", and the related sub-questions.

Relevant stakeholders were involved in the needs assessment. Interviews with vice chair of the Department of Accounting Teacher Education, an expert at MONE, and an instructor teaching pedagogical courses (Instructional Planning and Evaluation, Instructional Technology and Material Development) were carried out individually. Undergraduate (sophomore, junior and senior) students' and graduates' opinions, perceptions and preferences toward the course were collected by two questionnaires developed for each group. Findings revealed by each instrument were explained separately under corresponding sub-headings.

4.1.1   Needs Regarding Teacher Education Programs and Development and Learning Course According to the Expert at MONE

An individual interview corresponding to this research questions was carried out with an expert at MONE. Professor had graduated from Higher Teacher School in 1958, which had been transformed to the current Technical Education Faculty in Gazi University. He has MA degree from Southern Illinois University in USA in the field of vocational and technical education. He received his PhD degree in the field of Curriculum Development at Ankara University. He has been working in education field since 1958 as either an academician in universities or administrative personnel in the Ministry. When the interview was carried out, he was working as an expert in the Modernization of Vocational Education and Training in Turkey (MTEM) project supported by European Union. In short, he has both valuable theoretical knowledge and experiences of putting theories into practice in terms of teacher education, vocational and technical education.

Regarding the goals of teacher education, he embraced an Atatürk's expression, "New generations will be your master pieces". He mentioned that

Atatürk aimed to educate secular, democratic and contemporary generations. Consequently, as Atatürk meant, Professor also believes that the goal of teacher education is to educate students who gain affective behaviors like attitudes and habits as well as cognitive behaviors with reference to the basic principles of the Republic. He expressed that teacher education has two functions: to raise good citizens of the Republic who posses basic human behaviors that a contemporary life necessitates and to raise individuals who acquired the required vocational competencies and behaviors.

Concerning the degree of attainment of these goals, he stated that this was a controversial issue. While Turkey has long term experience in teacher education and there have been good improvements since the beginning of the Republic, he indicated some problems affecting attainment of the goals. One of them was that teacher education system has been affected extremely by politics, especially in 1970s and 1980s. He talked about the reconstruction of teacher education in universities in the place of institutions affiliated with MONE with regard to Higher Education Act in 1982. For Professor, this transformation provided teacher education to become a discipline at undergraduate university level because it was not structured well beforehand. He claimed; "although this was an important improvement, healthy communication between MONE and CHE has not been established at intended level yet."

He also emphasized on another problem that universities have a limited experience in teacher education in spite of their theoretical contributions. To what extent universities give importance to teacher education adequately was stated as another concern. Lastly, he highlighted a problem between demand and supply in vocational teacher education; that is, supplying more teacher candidates than demanded; "I believe that in Turkish Education System, the most important problem is in quality not quantity. For this reason, we should endeavor to train teachers capable of fulfilling intended responsibilities not supply quantitative demand".

According to Professor, teachers should have the following three main characteristics: (1) a common overall knowledge to be able to perceive daily incidences because they have a leadership role so they should be a good model, (2) knowledge in their subject field like accounting, commerce, and (3) teaching

competencies to be able to teach what was learned; that is, they should know how to teach for efficient and qualified instruction.

Additionally, he was asked to evaluate current teachers. He answered this question based on his experiences with teachers he has encountered. He did not generalize but indicated that there was a weakness in teaching what was learned; that is, in putting theory into practice and added; "especially, in vocational and technical teacher education faculties, there is a lack of teaching practice".

As a reason, he thought that universities give more importance to theory than practice and pedagogical courses are not considered as important as subject/area courses. Furthermore, according to Professor, the understanding "a person who knows can teach as well" needs transformation. Thirdly, weaknesses in sustainability of competencies were stated by Professor. He proposed that there should be a life long learning system supporting teachers to develop themselves. In this regard, he mentioned existence of various opportunities such as easy access to information via digital technology and exchanges of knowledge and experience among countries especially through European Union supported projects.

Regarding the importance of Development and Learning course, he claimed that teaching without knowing target groups' characteristics; their weaknesses, strengths and learning pace is a very inappropriate way of instruction. He illustrates,

> …if a teacher is not aware of individual differences in learning, if he/she wants students to know and behave as he/she taught and if everyone does not behave in the same way, he/she would call on one student as successful and another one as unsuccessful. The person who is called unsuccessful may be successful with another learning style. For this reason, where does this lead us? It addresses a necessity that we should pay attention to individual learning together with group learning; that is, we should highlight learning centered approach…we try to reshape human behaviors through education and if we do not know the material that we shape, it would be hard for us to fulfill this process properly and effectively. Therefore, for everyone who would be a teacher, even, teachers from preschools and faculty members from universities, having a minimum knowledge in these topics is very crucial.

For objectives of the course, Professor said that he is not expert in this field but he explained the following ones in general;

1. to gain required knowledge to know persons, to know development stages,
2. to know learning theories, their weaknesses and strengths, and
3. to be able to apply learning theories into learning environments.

When he expressed his perception about the attainment degree of these objectives he answered that since there is not any internal evaluation/accreditation system in universities, it is not possible to talk about to what extent these objectives are attained.

In order to develop this course, he emphasized that students' competencies should be identified first, and the program should be planned with reference to these competencies. That is, appropriate methods, strategies, materials and environment should be determined based on these competencies/outputs. Meantime, adequate number of qualified teacher trainers should be recruited. Then, he briefly concluded that we should approach teacher education from a holistic perspective where all components are congruent with one-another.

Consequently, Professor talked about the teacher education system, its goals and problems. He emphasized some systematic problems which actually go beyond the scope of this study. On the other hand, his other expressions highlighted important points. Regarding Development and Learning course, he agreed on its importance for teacher education. Concerning objectives of the course, he pointed out three main objectives; "to know development and learning theories", "to know weaknesses and strengths of theories" and "to apply theories in learning environment". As deficiencies that should be improved, he stressed several times the lack of teaching practice and putting theories into practice in teacher education faculties in contrast to the adequacy of theoretical knowledge. This explanation underlined that the application of development and learning theories in learning environment should be taken into account in redesigning Development and Learning course.

4.1.2. Needs Regarding Accounting Teacher Education Program and Development and Learning Course According to the Instructor Who Teaches Pedagogical Courses in the Faculty

An individual interview was also conducted with an assistant professor, who teaches pedagogical courses in the faculty. He has a bachelor degree in French Teacher Education in Gazi University, MA in the Curriculum and Instruction and PhD degree in the Curriculum Development in Abant İzzet Baysal University. He has been teaching pedagogical courses for 10 years. Currently, he has been teaching

'instructional planning and evaluation' and 'instructional technology and material development' courses in the faculty. Questions were asked under two headings; regarding general and accounting teacher education and Development and Learning course. In detail, goals of teacher education and problems in the attainment of these goals, teacher characteristics and deficiencies in the current accounting teachers' characteristics were asked.

About the goals of teacher education, he indicated three main goals: knowledge and skills of subject courses, knowledge and skills of pedagogical courses and teaching practice. As regards current teacher education, he pointed out the quality problems affecting effective instruction and attainment of these goals. He mentioned that there is an inequality of opportunities in teacher education. Reasons of this inequality were explained as that there are a limited number of teacher trainers in contrast to high number of students and trainers do not have similar characteristics and opportunities. Additionally, teaching practice problem was also mentioned. He said that while there were teaching practices on formal documents, these were not sufficient for real practice. He explained that teaching practice courses like School Experience I, II and Teaching Practice cannot reach their objectives since they are not practiced effectively as intended on account of the protocol between MONE and CHE. He illustrated, "for School Experience I and II, fee paid to supervising instructors for just one hour in a week is insufficient; thus, they mostly did not take this course seriously and did not go to schools to inspect teacher candidates."

There are also studies that were carried out in different teacher education faculties and addressed the inadequacy of these courses in attaining intended objectives (e.g., Paker, 2005; Sılay & Gök, 2005). Besides these, he indicated limited sources of instructional materials as another problem.

Briefly, he stated that there is no problem in acquiring theoretical knowledge about subject area or teaching, but especially there are problems in attaining vocational and teaching skills owing to inadequate teaching practice, limited number of qualified teacher trainers and insufficient instructional materials.

Concerning professional and personal characteristics of accounting teachers, he explained that they should have adequate knowledge in their field, they should know how to transfer knowledge to students and they should devote themselves to teaching profession, their students and human beings. In this regard, he mentioned

that according to his observations, accounting teachers do not have serious problems in terms of teaching characteristics other than using various instructional materials; as they frequently prefer using blackboard instead of power-point presentation, transparencies, projector, etc.

As regards the importance of Development and Learning course, the instructor said that in order to see the relation between developmental stages and learning, students should take this course. Moreover, he added that each teacher has to work with a group of students at a specific age and this course is very important for all teachers and teacher candidates to be able to arrange learning environment, select teaching methods, define objectives, and prepare plans and materials appropriate to these students. For these reasons, he considers this course as an important prerequisite of the subsequent pedagogy courses like instructional planning and evaluation, classroom management and so forth. In addition to these contributions of the course, he stated that this course contributes to students' personal development hence throughout this course students find an opportunity to assess themselves.

Furthermore, he thinks that this course provides theoretical base and framework of his courses (Instructional Planning and Evaluation & Instructional Technologies and Material Development). He explained that preparing a plan and developing a material require following some principles and these principles are determined in line with the principles of Development and Learning course.

Concerning the objectives of Development and Learning course, he stated two main dimensions; to gain skills to be able to know their students' developmental level and to understand learning characteristics and nature of students. Based on his observations in his class, he believes that this course is moderately adequate in the attainment of the objectives. However, since his course progress was mostly dependent on practices rather then theories, he could not speak certainly about the adequacy of the course in this respect.

His suggestions for the development of the course can be presented as regards content, teaching-learning process, and assessment. According to the instructor, physical, cognitive, moral and personality development topics and learning theories should be covered. In his opinion, questioning, case study, problem solving, discussion are effective methods for this course because there is much abstract

knowledge. It was pointed out that case studies would help for retention of knowledge. He suggested that student presentations supported by instructor could be used in such a course. For active participation, he recommended the use of worksheets especially as a way of preliminary preparation. Concerning instructional materials, worksheets and power-point slides were indicated. Regarding assessment tools, follow-up tests given at the end of each topic were pointed out as a formative assessment tool. The instructor advised portfolio in which students save their studies throughout a course. He explained that at the same time, portfolio would serve as a tool both formative and summative assessment and it would encourage students to pay more attention to process not only end product.

Consequently, the instructor considers this course important not only for teaching profession but also for personal development and subsequent pedagogical courses including his own courses. Two objectives stated by the instructor were also mentioned by the Professor at MONE, as well. The instructor stated again the inadequacy of teaching practice in putting theory into practice. Thus, the instructor's recommendations related to teaching learning and assessment methods like case studies, work sheets, power-point presentations, discussion, questioning and follow-up tests and portfolio should be taken into account in redesigning this course and in these methods/strategies, applications of theories in teaching should be emphasized.

4.1.3. Needs Regarding Accounting Teacher Education Program and Pedagogical Courses According to the Vice Chair of the Department of Accounting Teacher Education

Vice chair of the department is an associate professor, who has a bachelor degree in the department of Business Administration in Gazi University, MA degree in the same program in Selçuk University and PhD degree in the Accounting Program in Anadolu University. Since 1989, she has been working as an academician in Selçuk University previously and then in Gazi University. Although she has never been in studies or projects regarding teacher education, she has been a faculty member in the Faculty of Commerce and Tourism Education since 1994.

According to the vice chair, teacher education is very important. Besides, she believes that taking pedagogical courses is very important even for persons who will not be a teacher because it helps persons to understand and improve themselves and

to grow their own children. Thus, she supports the inclusion of pedagogical courses into the graduate programs.

Regarding the goal of teacher education, she indicated that it is not only to transfer knowledge but also to contribute to students' personality development. She also added that teacher education should raise teacher candidates who are able to look at learners from different perspectives, analyze and reason any procedure or incidence, make interpretations, think from different point of view and have a mission. In this point, this expression showed that she emphasizes on the importance of thinking skills in teacher education. For her, the use of knowledge is important rather than absorbing it and teacher education should present a learning environment that provides teacher candidates to learn how to use knowledge properly.

As a main problem in teacher education regarding the attainment of goals, she stated that students in the Accounting Teacher Education program generally were not willing to be a teacher. She explained that students prefer teacher education faculty not to be a teacher but to possess a guaranteed job like teaching. In her opinion, the quality of education is actually good but the quality of students is not. For this reason, she suggested that there should be a barrier system to eliminate teacher candidates who are not appropriate for teaching profession.

Concerning the characteristics of accounting teachers, she pointed out that as well as mastery of subject matter, personality characteristics are crucial such as being respected, being honest, and acting in time. Peculiar to the accounting field, the vice chair talked about the necessity of social responsibility characteristic, which is required to prevent unfair earnings and out of record economy. Therefore, she asserted that first of all accounting teachers should have this characteristic to be a good model to their students. In terms of professional characteristics, she mostly emphasized on teaching strategies. She indicated that in teaching accounting, teachers should use deductive instruction, teach students to relate parts to whole and let students to think and make comments and inferences.

According to her observations in vocational high schools, there is a main problem in teacher characteristics that accounting teachers generally do not follow new developments and advancements in their area and in teaching. As a reason she explained that they think this unnecessary since their knowledge is already too much for their students. On the other hand, her explanations about recent teacher

candidates are more promising because for her, they are eager to learn new innovations in accounting and to develop themselves in terms of subject matter knowledge.

These results of the interview with the vice chair of the Department of Accounting Teacher Education highlighted remarkable needs regarding teacher education. Primarily, there is a need for an education system in which personality development of teacher candidates is considered as important as their cognitive development. Next, even though recent candidates are more promising, teacher education still needs to be enriched with learning environment which would contribute to teacher candidates' motivation to be eager for teaching, guide them to develop themselves in their field and focus on their thinking skills such as making comments and inferences and having different perspectives. In light of these results, according to her, the goals of teacher education are to transfer knowledge and to teach how to apply knowledge, to contribute students' personality development and to develop teacher candidates' thinking skills.

4.1.4. Needs Regarding Development and Learning Course's Objectives, Content, Teaching-Learning Process and Assessment Procedures According to the Sophomore, Junior and Senior Students

In order to identify needs regarding the course objectives, content, teaching-learning process and assessment procedures from the sophomore, junior and senior students' points of view, a needs assessment questionnaire was developed (see Appendix A). The quantitative data obtained from the questionnaire was analyzed by using descriptive statistics such as percentage distribution, mean, median, mode and standard deviation. Findings regarding objectives, content, teaching-learning process and assessment techniques of the course were presented separately.

4.1.4.1. Objectives of the Course

On behalf of identifying needs regarding objectives of Development and Learning course according to the sophomore, junior and senior students, three questions were asked in the needs assessment questionnaire.

First of all, students were asked why being successful in this course is important and they were requested to rank the eight reasons given already in the

questionnaire from the most important to the least important one. These reasons were "to pass the course", "to graduate from the faculty", "to succeed in the Public Personnel Selection Exam (KPSS)", "to understand reasons of students' development and behaviors", "to learn basic knowledge about topics in development and learning", "to plan educational activities appropriate to students' development", and "to provide effective learning environment in teaching profession". The purpose of this question was to expose goals of the course from students' point of view. The results are given in Table 20.

Table 20

Percentage Distribution of the Students Who Ranked the Reasons Regarding the Importance of Being Successful in This Course

	Rank												
	1.	2.	3.	4.	5.	6.	7.	8.			*Mdn*	*Mode*	
Reasons				%					*N*	*M*			*SD*
To pass the course	21.05	5.59	5.26	8.55	25.66	17.11	14.80	1.97	304	4.33	5	5	2.16
To graduate from the faculty	4.32	15.61	4.98	3.65	12.29	36.88	21.26	1.00	301	5.50	6	6	1.91
To succeed in the PPSE (KPSS)	4.64	5.96	14.24	6.29	21.52	13.25	33.11	0.99	302	5.11	5	7	1.86
To understand sts' dev. and beh.	23.84	21.85	15.23	18.54	8.61	5.30	5.96	0.66	302	3.09	3	1	1.82
To learn basic knowledge	11.96	15.61	17.28	29.24	10.96	6.64	8.31	-	301	3.65	4	4	1.70
To plan the educ. activ. properly	8.33	25.33	26.00	14.67	9.67	11.67	4.33	-	300	3.44	3	3	1.64
To provide effective learning env.	25.00	12.17	17.76	19.41	9.54	6.58	8.88	0.66	304	3.35	3	1	1.94

The results revealed that for more than half of the students, being successful in this course was important especially for gaining skills regarding teaching profession. Because the total percentages of the students who ranked the reasons, "to understand reasons of students' development and behaviors", "to plan educational activities appropriate to students development" and "to provide effective learning

environment in teaching profession", among the first three important reasons were 61%, 60% and 55%, respectively. Compared to these reasons, another reason related to the attainment of teaching skills, "to learn basic knowledge about topics in development and learning", was considered less important with a slight decrease by 45 % of the students.

On the other hand, while the majority of the students ranked the reasons "to pass the course" and "to graduate from the faculty" as the 5th, 6th, 7th or 8th important reasons, it is noteworthy that total percentages of the students who enumerated these reasons among the first three important reasons were around 32 and 25 percent, respectively. This result indicates that a remarkable amount of the students did not consider that the course was not worth learning.

Apart from these reasons, a small number of students expressed additional reasons, such as "to have intellectual knowledge", "to have higher GPA", "to learn how cognitive development affects human life and what kinds of character we have", "to communicate people, to be a good parent beneficial to their children/nephews as well as to be a good teacher", "to learn all development and learning periods they would live throughout in their life", "to provide a good character to their students", "to be a good teacher", and "to like the instructor".

In short, on the one hand, responses to this question demonstrated that most of the students recognized the importance of being successful in the course for teaching profession. On the other hand, less but a remarkable number of students equated 'succeeding in this course' with 'passing this course' instead of 'learning or attaining any teaching skills'.

The second question was related to the importance of the course objectives. These objectives were listed and given in the questionnaire (see the questionnaire in Appendix A). Then, the students were asked to what extent these objectives were important in order to determine which objective needs to be covered in the course. The frequency distribution and descriptive statistics results of the responses are presented in Table 21.

Table 21

Percentage Distribution and Descriptive Statistics of the Students' Responses toward the Importance of the Course Objectives

Objectives	not important	little important	undecided	important	very important	N	M	Mdn	Mode	SD
			%							
Obj1	1.30	9.10	3.80	56.00	29.90	318	4.04	4	4	0.90
Obj2	0.90	5.00	3.50	45.00	45.60	318	4.29	4	5	0.83
Obj3	3.50	12.10	6.30	50.20	27.90	315	3.87	4	4	1.06
Obj4	2.80	7.20	5.30	48.10	36.50	318	4.08	4	4	0.98
Obj5		5.10	4.50	37.10	53.40	313	4.39	<u>5</u>	5	0.80
Obj6	1.90	2.90	8.30	36.90	50.00	314	4.30	<u>4.5</u>	5	0.88
Obj7	0.30	3.20	3.50	32.00	61.10	316	4.50	<u>5</u>	5	0.74
Obj8	1.30	5.40	12.00	50.20	31.20	317	4.05	4	4	0.87
Obj9	2.90	16.80	17.50	48.20	14.60	309	3.55	4	4	1.03
Obj10	3.90	19.30	19.90	40.20	16.70	311	3.47	4	4	1.10
Obj11	1.00	6.40	5.40	43.50	43.80	313	4.23	4	5	0.89
Obj12	0.60	3.20	2.20	42.40	51.60	314	4.41	<u>5</u>	5	0.75
Obj13	0.60	5.10	4.50	34.80	55.00	313	4.38	<u>5</u>	5	0.84
Obj14	0.60	3.20	3.20	27.60	65.40	312	4.54	<u>5</u>	5	0.76
Obj15	4.60	13.70	13.70	42.20	25.80	306	3.71	4	4	1.13
Obj16	5.20	17.70	23.30	36.70	17.00	305	3.43	4	4	1.12
Obj17	5.90	13.50	16.80	41.90	21.80	303	3.60	4	4	1.14
Obj18	3.90	9.10	14.70	42.00	30.30	307	3.86	4	4	1.07
Obj19	2.60	5.20	9.80	36.50	45.90	307	4.18	4	5	0.99
Obj20	0.30	4.40	3.80	38.50	53.00	317	4.39	<u>5</u>	5	0.79
Obj21	1.60	11.40	11.10	47.80	28.20	316	3.90	4	4	0.99
Obj22	2.90	16.70	12.20	45.00	23.20	311	3.69	4	4	1.09
Obj23	0.90	3.80	7.60	43.20	44.50	317	4.26	4	5	0.83
Obj24	0.60	4.10	4.40	41.10	49.70	316	4.35	4	5	0.80
Obj25	0.60	2.50	3.80	32.30	60.80	316	4.50	<u>5</u>	5	0.75
Obj26	0.90	1.90	4.40	32.80	59.90	317	4.49	<u>5</u>	5	0.75
Obj27	0.30	4.10	4.50	29.00	62.10	314	4.48	<u>5</u>	5	0.79
Obj28	2.90	12.50	11.60	43.40	29.60	311	3.84	4	4	1.07
Obj29	4.50	16.40	13.80	40.20	25.10	311	3.65	4	4	1.15
Obj30	0.60	4.80	8.10	39.00	47.40	310	4.28	4	5	0.86
Obj31	0.30	5.50	5.50	35.70	52.90	308	4.35	<u>5</u>	5	0.84

Table 21 *(Continued)*

Objectives	not important	little important	undecided	important	very important	N	M	Mdn	Mode	SD
			%							
Obj32	0.30	1.90	3.90	29.10	64.70	309	4.56	<u>5</u>	5	0.69
Obj33		2.60	5.20	28.50	63.80	309	4.53	<u>5</u>	5	0.71
Obj34	3.50	11.40	11.40	48.90	24.90	317	3.80	4	4	1.05
Obj35	4.70	19.20	16.10	41.60	18.30	317	3.50	4	4	1.14
Obj36	1.60	12.50	12.10	43.50	30.40	313	3.88	4	4	1.03
Obj37	3.50	18.20	20.70	40.10	17.50	314	3.50	4	4	1.09
Obj38	2.50	12.10	11.50	45.20	28.70	314	3.85	4	4	1.05
Obj39	1.30	8.60	13.10	42.00	35.00	314	4.01	4	4	0.97
Obj40	3.60	16.60	14.00	49.40	16.60	308	3.59	4	4	1.06
Obj41	3.90	13.40	18.20	40.40	24.10	307	3.67	4	4	1.10
Obj42	5.90	11.40	14.40	43.10	25.20	306	3.70	4	4	1.14
Obj43	7.10	17.50	14.00	44.80	16.60	308	3.46	4	4	1.17
Obj44	2.00	9.20	12.80	41.30	34.80	305	3.98	4	4	1.01
Obj45	4.20	17.30	14.70	45.90	17.90	307	3.56	4	4	1.10
Obj46	6.10	16.10	13.50	42.60	21.60	310	3.57	4	4	1.17
Obj47	1.90	5.30	3.80	34.00	55.00	318	4.35	<u>5</u>	5	0.92
Obj48	0.90	6.00	6.60	42.40	44.00	316	4.22	4	5	0.89
Obj49	3.50	17.00	14.50	40.80	24.10	311	3.65	4	4	1.13
Obj50	3.80	19.10	13.70	40.10	23.20	314	3.60	4	4	1.15
Obj51	0.30	1.90	5.10	19.80	72.80	313	4.63	<u>5</u>	5	0.70
Obj52	3.50	4.70	4.70	46.50	40.50	316	4.16	4	4	0.97
Obj53	0.90	3.20	4.10	33.40	58.40	317	4.45	<u>5</u>	5	0.80
Obj54	1.90	7.30	8.90	45.70	36.20	315	4.07	4	4	0.96
Obj55	0.60	5.40	6.10	32.10	55.80	312	4.37	<u>5</u>	5	0.87
Obj56	1.90	3.50	2.90	35.60	56.10	312	4.40	<u>5</u>	5	0.86
Obj57	0.60	5.10	6.30	32.10	55.90	315	4.37	<u>5</u>	5	0.86

When the responses were scrutinized, it was found that all the listed objectives were evaluated as *important* or *very important* by the majority of the students. Even median values, which are equal to 4.5 and 5, showed that more than half of the students indicated 19 of the objectives as *very important* (underlined objectives in Table 21). When they were examined, it was noticed that the students especially gave more importance to objectives regarding putting theory into practice

such as "understanding students' differences", "helping students' development", "preparing appropriate learning environment", "applying what was learned to classroom environment" and "transferring learned knowledge to the other pedagogical courses".

Besides, when percentage of the students whose responses were *not important* or *little important* was looked over, it was noted that it changed between 20 to 25 % for Objectives 9, 10, 16, 22, 29, 35, 37, 40, 43, 45, 46, 49, and 50. These objectives were related to cognitive skills such as "understanding different theories/approaches in a topic", "comparing them", "distinguishing similarities and differences among them", and "determining strengths and weaknesses of the approaches". This noteworthy result points out that almost 20 % of the students did not consider these higher order thinking and theory based objectives necessary to attain.

As the third question, to what extent students feel competent in the attainment of the given objectives was asked and responses of the students are presented in Table 22. The aim of this question was to elicit the gap between the importance and attainment degree of the objectives because this gap would address learning needs. In other words, if the students consider an objective important to accomplish but they perceive themselves incompetent in the attainment of that objective, this would point out learning needs or instructional problems that should be overcome through effective instructional techniques.

As can be seen from Table 22, median values of 17 objectives are 3.5 or 4, which means that at least half of the students felt *competent* or *very competent* in these objectives. These 17 objectives, which are shown in Table 23, revealed that these students perceived themselves good at basic concepts, moral development, motivation, and transfer of knowledge to other courses.

Table 22

Percentage Distribution and Descriptive Statistics of the Students' Responses toward Their Own Competencies in the Attainment of the Course Objectives

Objectives	incompetent	little competent	undecided	competent	very competent	N	M	Mdn	Mode	SD
			%							
Obj1	3,50	32,40	10,50	50,50	3,20	315	3,17	4	4	1,03
Obj2	2,20	25,40	12,10	53,00	7,30	315	3,38	4	4	1,01
Obj3	3,80	34,90	15,60	41,00	4,80	315	3,08	3	4	1,05
Obj4	7,30	30,00	20,50	37,90	4,40	317	3,02	3	4	1,07
Obj5	3,20	27,60	17,50	42,20	9,50	315	3,27	4	4	1,07
Obj6	6,10	28,00	24,20	34,70	7,00	314	3,09	3	4	1,07
Obj7	5,30	29,80	21,90	34,20	8,80	319	3,11	3	4	1,09
Obj8	6,10	35,50	21,10	31,60	5,80	313	2,96	3	2	1,07
Obj9	13,30	33,80	20,10	27,30	5,50	308	2,78	3	2	1,15
Obj10	13,80	33,40	21,60	26,90	4,30	305	2,74	3	2	1,12
Obj11	9,00	26,70	18,30	39,50	6,40	311	3,08	3	4	1,13
Obj12	5,70	25,20	19,70	39,50	9,90	314	3,23	3	4	1,11
Obj13	6,10	27,90	21,80	35,60	8,70	312	3,13	3	4	1,10
Obj14	6,10	26,50	19,00	39,00	9,40	310	3,19	3	4	1,11
Obj15	10,30	32,60	23,90	28,60	4,70	301	2,85	3	2	1,09
Obj16	14,20	31,50	24,70	25,80	3,70	295	2,73	3	2	1,11
Obj17	15,80	31,50	20,50	27,90	4,40	298	2,73	3	2	1,15
Obj18	10,00	34,30	17,70	33,00	5,00	300	2,89	3	2	1,12
Obj19	11,80	28,70	22,60	30,40	6,40	296	2,91	3	4	1,15
Obj20	2,20	21,30	9,80	53,00	13,70	315	3,55	4	4	1,04
Obj21	6,70	24,50	19,40	40,10	9,20	314	3,21	3	4	1,12
Obj22	9,50	28,90	17,40	37,20	6,90	304	3,03	3	4	1,15
Obj23	5,50	20,60	23,50	38,90	11,60	311	3,31	4	4	1,09
Obj24	4,20	24,80	17,10	42,90	11,00	310	3,32	4	4	1,09
Obj25	4,20	20,50	18,30	45,20	11,90	312	3,40	4	4	1,07
Obj26	6,80	21,40	20,40	40,50	11,00	309	3,28	4	4	1,12
Obj27	5,60	25,20	20,60	37,60	11,10	306	3,24	3	4	1,11
Obj28	9,70	26,80	23,40	34,40	5,70	299	3,00	3	4	1,11
Obj29	13,60	28,60	26,20	25,90	5,60	301	2,81	3	2	1,13
Obj30	8,10	27,70	20,60	36,50	7,10	310	3,07	3	4	1,12

Table 22 *(Continued)*

Objectives	% incompetent	little competent	undecided	competent	very competent	N	M	Mdn	Mode	SD
Obj31	5,50	25,60	20,10	38,60	10,10	308	3,22	3	4	1,11
Obj32	7,50	25,50	17,00	36,90	13,10	306	3,23	3,5	4	1,18
Obj33	7,10	30,00	17,40	34,50	11,00	310	3,12	3	4	1,16
Obj34	8,70	22,30	12,90	43,90	12,30	310	3,29	4	4	1,19
Obj35	12,10	26,10	17,60	36,80	7,50	307	3,02	3	4	1,19
Obj36	9,50	28,10	19,30	35,90	7,20	306	3,03	3	4	1,14
Obj37	13,30	25,70	23,00	31,30	6,70	300	2,92	3	4	1,17
Obj38	7,20	28,90	16,80	40,10	6,90	304	3,11	3	4	1,12
Obj39	9,50	25,00	21,10	36,80	7,60	304	3,08	3	4	1,14
Obj40	10,70	29,90	23,20	30,90	5,40	298	2,90	3	4	1,12
Obj41	10,40	26,80	20,50	34,20	8,10	298	3,03	3	4	1,16
Obj42	13,80	25,20	19,80	31,90	9,40	298	2,98	3	4	1,23
Obj43	14,80	28,50	20,80	31,90	4,00	298	2,82	3	4	1,15
Obj44	12,70	26,40	23,10	32,10	5,70	299	2,92	3	4	1,15
Obj45	15,00	33,30	22,00	23,30	6,30	300	2,73	3	2	1,16
Obj46	13,30	29,70	20,30	31,00	5,70	300	2,86	3	4	1,16
Obj47	2,60	18,30	5,80	52,20	21,20	312	3,71	4	4	1,07
Obj48	3,20	20,80	10,30	48,40	17,30	312	3,56	4	4	1,10
Obj49	7,60	26,60	20,10	38,20	7,60	304	3,12	3	4	1,12
Obj50	8,90	24,70	25,00	32,90	8,60	304	3,08	3	4	1,13
Obj51	2,50	16,80	8,60	49,80	22,20	315	3,72	4	4	1,07
Obj52	5,40	16,60	12,50	53,70	11,80	313	3,50	4	4	1,07
Obj53	1,90	13,70	13,40	57,30	13,70	314	3,67	4	4	0,94
Obj54	7,10	23,40	20,80	41,60	7,10	308	3,18	3	4	1,09
Obj55	7,20	24,20	19,60	40,20	8,80	306	3,19	3	4	1,12
Obj56	4,20	16,50	20,30	44,80	14,20	310	3,48	4	4	1,06
Obj57	3,90	18,50	16,20	45,10	16,20	308	3,51	4	4	1,09

Table 23

The List of the Objectives for Which At Least Half of the Students Perceived Themselves Competent or Very Competent

Objective no	Objectives
	Objectives regarding the basic concepts in development and learning
1	to know basic concepts regarding development
2	to know basic concepts regarding learning
	Objectives regarding development
5	to understand individual differences among sts in terms of physical development
20	to know moral development processes
23	to follow sts' moral development process
24	to understand individual differences among sts in terms of moral development
25	to help sts' moral development
26	to prepare educational environment towards improving sts' moral development level
32	to help sts' personality development
	Objectives regarding learning
34	to explain learning according to behaviorist approach
	Objectives regarding motivation
47	to explain the relationship between learning and motivation
48	to determine internal and external motivation sources
51	to motivate sts in an educational environment
	General objectives
52	to group related topics and concepts mentioned within a unit
53	to relate parts of a topic with whole topic
56	to use what they have learned in other pedagogical courses
57	to use what they have learned outside of the school

On the other hand, for the other objectives, more than half of the students considered themselves *incompetent*, *little competent* or *undecided*. Especially, there were problems for the attainment of the objectives given in Table 24 since total percentages of the students who considered themselves *incompetent* or *little incompetent* in these objectives change from 40 to 48 %, which are high enough to take into account. It could be inferred from this result that these students had problems particularly with "acquiring theoretical knowledge about cognitive development, linguistic development", "detecting similarities and differences" and "determining strengths and weaknesses among cognitivist and behaviorist learning theories". Moreover, it was noticed that these objectives were the same with those that were indicated as *little important* or *not important* at most among the others (20-25 % in total) in the preceding question. For this amount of students, this result may

imply that the reason for feeling incompetent lies beneath their perception toward the importance of these objectives or vice versa. Nevertheless, the majority of the students still consider these objectives important as well as the other ones.

Table 24

The List of the Objectives for Which 40 To 48 % of the Students Perceived Themselves Incompetent or Little Competent in Total

Objective no	Objectives
	Objectives regarding development
8	to know cognitive development processes (42 %)
9	to understand different theories regarding cognitive development (47 %)
10	to compare different theories regarding cognitive development (47 %)
15	to know linguistic development processes (43 %)
16	to understand different approaches regarding linguistic development (46 %)
17	to follow sts' linguistic development process (47 %)
18	to understand individual differ. among sts in terms of linguistic development (44 %)
19	to prepare educational environment towards improving sts' linguistic development
29	to compare different theories regarding moral development (42 %)
	Objectives regarding learning
40	to determine strengths and weaknesses of the social learning theory (40 %)
43	to distinguish differences and similarities among cognitivist theories (43 %)
45	to determine strengths and weaknesses of the cognitivist approach (48 %)
46	to determine differences between cognitivist and behaviorist approaches (43 %)

In conclusion, it was implied that there were learning needs and instructional problems especially regarding the attainment of these 40 objectives. In other words, this result implied that there was a need to redesign teaching-learning process and to create a learning environment so as to ensure the attainment of these objectives as well as the others.

4.1.4.2. Content of the Course

The objectives in the questionnaire had been prepared for each topic that had been already covered in the course. Thus, any objective that was responded as *important* or *very important* also addressed the importance and necessity of the corresponding topic. As it can be seen from the aforementioned results, the majority of the students concurred on the importance of all objectives; therefore, main topics

in line with the objectives were considered necessary to be covered in the content of the course. These main topics are listed in Table 25.

Table 25

The List of Topics That Need To Be Covered in the Course

Topics	
A. Development	B. Learning
a.1. Basic concepts regarding development	b.1. Basic concepts regarding learning
a.2. Physical and psychomotor development	b.2. Behaviorist approach to learning
a.3. Cognitive development	b.3. Cognitivist approach to learning
a.4. Linguistic development	b.4. Motivation
a.5. Moral development	
a.6. Personality development	

4.1.4.3. Teaching-Learning Process of the Course

In order to identify the students' needs toward teaching-learning process of the course, the students were asked to evaluate the listed activities and strategies in Table 26 as to two questions: "how frequently these activities/strategies were carried out in the course" and "to what degree these activities/strategies are effective for learning". If there was a gap between the frequency and effectiveness of these activities/strategies; that is, if activities/strategies were considered *effective* but *never* or *rarely* used in the course, this result pointed out that there was a need for those activities/strategies.

Table 26

List of Activities and Strategies

	Activities and Strategies
1	Teaching-learning process based on the student-centered approach
2	Teaching-learning process based on the teacher-centered approach
3	Activities towards developing critical thinking skills
4	Activities towards developing creative thinking skills
5	Activities towards developing problem solving skills
6	Giving responsibilities to sts in some activities
7	Presentation of topics by sts
8	Providing active classroom participation
9	Providing interaction between sts and the instructor
10	Providing interaction among sts
11	Relating topics with each other
12	Doing comparison among theories
13	Doing comment on topic, case and phenomenon
14	Relating the course with the other pedagogical courses
15	Questioning technique
16	Discussion/debate about topics
17	Search and discussion of articles related to topic
18	Observation of persons and learning environment in terms of development and learning theories
19	Discussion of these observations
20	Interviewing with persons from different age groups to understand their personality, moral and social development
21	Discussion of these interviews
22	Case studies
23	Concept map of concepts in a topic
24	Conducting research
25	Thinking skills activities
26	Group work
27	Use of various sources
28	Use of transparencies
29	Use of worksheets
30	Watching video
31	Feedback about students' performance
32	Invitation of visitor teachers/academicians
33	Peer evaluation
34	Follow-up tests given at the end of each topic
35	Drama

Results related to the frequency of the activities/strategies in the course are given in Table 27. First of all, the responses regarding the item "teaching-learning process based on the student-centered approach (Act1)" displayed that student-centered activities were carried out in the course *often* according to 47 % of the students and *sometimes* according to 30 % of them.

120

Table 27

Percentage Distribution and Descriptive Statistics of the Students' Responses toward the Frequency of the Activities/Strategies in the Course

Activities/ Strategies	never	rarely	sometimes	often	always	N	M	Mdn	Mode	SD
			%							
Act1	3.80	8.60	30.30	47.50	9.90	314	3.51	4	4	0.92
Act2	3.50	16.30	36.20	35.90	8.00	312	3.29	3	3	0.95
Act3	8.80	21.20	37.50	22.80	9.80	307	3.04	3	3	1.09
Act4	8.10	17.80	29.80	30.40	13.90	309	3.24	3	4	1.14
Act5	14.90	23.60	39.20	15.90	6.50	309	2.75	3	3	1.09
Act6	2.30	11.90	29.90	39.20	16.70	311	3.56	4	4	0.98
Act7	7.70	16.10	26.40	34.10	15.80	311	3.34	3	4	1.15
Act8	1.30	10.60	26.80	40.60	20.60	310	3.69	4	4	0.96
Act9	3.20	9.10	27.90	37.00	22.70	308	3.67	4	4	1.03
Act10	6.20	15.90	28.20	35.40	14.30	308	3.36	3	4	1.10
Act11	0.70	7.60	22.30	51.20	18.30	301	3.79	4	4	0.85
Act12	4.40	7.80	22.40	47.60	17.70	294	3.66	4	4	1.00
Act13	1.60	8.20	22.60	46.90	20.70	305	3.77	4	4	0.93
Act14	11.50	18.60	37.30	23.70	8.80	295	3.00	3	3	1.11
Act15	7.00	17.20	32.80	27.80	15.20	302	3.27	3	3	1.13
Act16	18.30	26.30	32.00	17.00	6.30	300	2.67	3	3	1.15
Act17	64.90	15.60	10.90	5.00	3.60	302	1.67	1	1	1.09
Act18	33.30	20.40	25.10	16.10	5.00	279	2.39	2	1	1.24
Act19	39.00	26.80	20.90	10.50	2.80	287	2.11	2	1	1.12
Act20	73.40	9.30	10.00	5.20	2.10	290	1.53	1	1	1.01
Act21	70.10	12.20	8.70	6.30	2.80	288	1.59	1	1	1.06
Act22	23.60	21.30	23.30	22.60	9.10	296	2.72	3	1	1.30
Act23	28.10	21.90	26.00	17.80	6.20	292	2.52	2.5	1	1.24
Act24	22.10	23.10	25.40	20.70	8.70	299	2.71	3	3	1.26
Act25	9.90	20.10	33.90	23.70	12.50	304	3.09	3	3	1.15
Act26	10.50	10.50	21.60	32.50	24.90	305	3.51	4	4	1.26
Act27	26.70	28.40	25.00	14.50	5.40	296	2.44	2	2	1.18
Act28	50.20	15.60	13.60	15.60	5.10	295	2.10	1	1	1.31
Act29	28.00	15.20	14.90	18.60	23.30	296	2.94	3	1	1.55
Act30	83.20	4.20	4.80	2.60	5.20	310	1.42	1	1	1.06
Act31	22.40	18.10	28.10	20.70	10.70	299	2.79	3	3	1.29
Act32	84.40	5.50	4.50	3.20	2.30	308	1.33	1	1	0.89
Act33	48.50	16.80	19.20	11.40	4.00	297	2.06	2	1	1.22
Act34	2.60	1.90	5.50	15.20	74.80	309	4.58	5	5	0.89
Act35	18.70	6.80	13.50	26.50	34.50	310	3.51	4	5	1.49

Nevertheless, more than half of the students in total expressed that some student-centered activities/strategies were *never*, *rarely* or *sometimes* carried out in the course. For instance, "search and discussion of articles related to topic (Act17, 65%)", "interviewing with persons from different age groups to understand their personality, moral and social development (Act20, 73%)", "discussion of these interviews (Act21, 70%)", "watching video (Act30, 83%)" had been never used. Moreover, the items "observation of persons and learning environments in terms of development and learning theories (Act18, 54%)", "discussion of these observations (Act19, 66%)", "concept map of concepts in a topic (Act23, 50%)", "use of various sources (Act27, 55%)", and "peer evaluation (Act33, 65%)" were responded as *never* or *rarely* occurred in this course by half or more than half of the students in total. Most of the students also indicated that the other student-centered and thinking based activities/strategies such as "activities towards developing problem solving skills (Act5, 78%)", "discussion/debate about topics (Act16, 77%)", "conducting research (Act24, 71%)", "activities towards developing critical thinking skills (Act3, 68%) and "case studies (Act22, 68%)" were *never*, *rarely* or *sometimes* used. Actually, according to the underlined median values in Table 27, only 10 of the listed activities/strategies was carried out often or always in the course for more than half of the students.

As it can be seen from Table 28, when total percentages of the students considering activities/strategies *ineffective* or *little effective* were examined, it was noted that of these activities/strategies, only "teaching-learning process based on the teacher-centered approach (Act2, 53 %)" and "use of transparencies (Act28, 52%)" had the highest percentages. Interestingly, for "invitation of visitor teachers/academicians (Act32)", the total percentage of the students who found it *ineffective/little effective* (40% in total) and *effective/very effective* (40% in total) was the same. As for the other ones, the students generally agreed that they were *effective* or *very effective* for learning.

Table 28

Percentage Distribution and Descriptive Statistics of the Students' Responses toward the Effectiveness of the Activities/Strategies in Terms of Learning

Activities/ Strategies	ineffective	little effective	undecided	effective	very effective	N	M	Mdn	Mode	SD
			%							
Act1	2.90	10.00	5.50	43.10	38.60	311	4.05	4	4	1.05
Act2	15.30	37.70	14.90	24.00	8.10	308	2.72	2	2	1.22
Act3	5.30	7.60	9.50	39.10	38.50	304	3.98	4	4	1.12
Act4	3.60	8.60	5.30	34.90	47.70	304	4.14	4	5	1.09
Act5	3.70	15.60	10.60	47.20	22.90	301	3.70	4	4	1.10
Act6	1.90	9.10	3.90	48.10	37.00	308	4.09	4	4	0.97
Act7	7.50	12.10	12.40	36.50	31.60	307	3.73	4	4	1.24
Act8	2.00	6.60	6.20	42.30	43.00	305	4.18	4	5	0.95
Act9	2.30	8.80	7.80	38.20	42.80	306	4.10	4	5	1.03
Act10	4.00	8.60	15.50	48.20	23.80	303	3.79	4	4	1.03
Act11	1.30	8.60	10.60	46.20	33.20	301	4.01	4	4	0.95
Act12	3.70	8.40	12.40	50.30	25.20	298	3.85	4	4	1.01
Act13	2.00	5.90	9.80	53.40	28.90	305	4.01	4	4	0.90
Act14	6.80	15.40	18.10	43.00	16.70	293	3.47	4	4	1.14
Act15	5.30	11.30	11.00	46.50	25.90	301	3.76	4	4	1.12
Act16	5.40	11.20	12.50	42.40	28.50	295	3.77	4	4	1.14
Act17	18.50	20.30	13.60	34.60	12.90	286	3.03	3	4	1.35
Act18	8.30	16.20	19.10	39.00	17.30	277	3.41	4	4	1.19
Act19	10.00	15.70	18.60	42.10	13.60	280	3.34	4	4	1.19
Act20	15.10	14.00	13.70	41.00	16.20	278	3.29	4	4	1.31
Act21	16.40	15.60	14.90	33.10	20.00	275	3.25	4	4	1.37
Act22	5.20	9.70	10.40	47.10	27.70	289	3.82	4	4	1.10
Act23	8.40	16.70	11.10	42.20	21.60	287	3.52	4	4	1.23
Act24	10.60	11.90	11.30	46.10	20.10	293	3.53	4	4	1.24
Act25	3.30	7.00	8.00	51.30	30.30	300	3.98	4	4	0.98
Act26	3.70	6.40	8.10	42.10	39.70	297	4.08	4	4	1.03
Act27	9.50	17.20	15.50	43.20	14.50	296	3.36	4	4	1.20
Act28	29.90	22.20	13.00	25.00	9.90	284	2.63	2	1	1.39
Act29	11.20	16.80	14.00	36.10	21.80	285	3.40	4	4	1.30
Act30	15.10	7.70	8.10	38.70	30.30	284	3.61	4	4	1.38
Act31	5.60	8.00	12.50	42.70	31.30	288	3.86	4	4	1.11
Act32	24.90	14.80	19.90	27.80	12.60	277	2.88	3	4	1.39
Act33	13.30	18.60	21.40	35.80	10.90	285	3.12	3	4	1.23
Act34	2.60	4.30	4.00	34.00	55.10	303	4.35	5	5	0.94
Act35	8.00	6.00	8.00	29.90	48.20	301	4.04	4	5	1.23

Furthermore, according to arithmetic mean values, the most 10 effective activities according to the students' opinions were respectively "follow-up tests given at the end of each topic (Act34, $M = 4.35$)", "providing active classroom participation (Act8, $M = 4.18$)", "activities towards developing creative thinking skills (Act4, $M = 4.14$)", "providing interaction between sts and the instructor (Act9, $M = 4.10$)", "giving responsibilities to sts in some activities (Act6, $M = 4.09$)", "group work (Act26, $M = 4.08$)", "teaching-learning process based on the student-centered approach (Act1, $M = 4.05$)", "drama (Act35, $M = 4.04$)", "relating topics with each other (Act11, $M = 3.98$)" and "doing comment on topic, case and phenomenon (Act13, $M = 3.98$)".

On the other hand, it was identified that most of these *effective/very effective* activities/strategies had been *never, rarely* or *sometimes* implemented in the course according to the most of the students in the preceding results. This result implied that teaching-learning process of the course required some revisions and modifications based on particularly these identified activities/strategies displayed in Table 29. The other effective ones that were applied in the course *often* or *always* should be kept.

Table 29

The List of the Needed Activities/Strategies According to the Students' Responses

	The Needed Activities and Strategies
3	Activities towards developing critical thinking skills
4	Activities towards developing creative thinking skills
5	Activities towards developing problem solving skills
7	Presentation of topics by sts
10	Providing interaction among sts
14	Relating the course with the other pedagogical courses
15	Questioning technique
16	Discussion/debate about topics
18	Observation of persons and learning environment in terms of development and learning theories
19	Discussion of these observations
20	Interviewing with persons from different age groups to understand their personality, moral and social development
21	Discussion of these interviews
22	Case studies
23	Concept map of concepts in a topic
24	Conducting research
25	Thinking skills activities
27	Use of various sources
28	Use of transparencies
29	Use of worksheets
30	Watching video
31	Feedback about students' performance

4.1.4.4. Assessment Techniques of the Course

In the Faculty of Commerce and Tourism Education, students' achievement is assessed based on their midterm and final exam scores with reference to the Gazi University regulations. In addition to objective test or essay exam, various assessment techniques can be used as a part of either midterm or final exam. Therefore, in the questionnaire, the students were requested to indicate their preferences toward assessment techniques for midterm and final exam.

The results and the order of their preferences are presented in Table 30. The students' first preference for midterm exam was multiple-choice test with 68 %. This is followed by follow-up tests with 61 %. With the same percentages (44%), group project and classroom participation appears as the third mostly preferred techniques. Presentation, individual project, assignments, essay exam and oral exam follow these techniques. Similar order was seen for final exam with slight differences on the percentages. For multiple-choice test, it raised from 68 to 75 %, while it decreased to 51 % and 38 % for follow-up test and group project respectively. The subsequent techniques were classroom participation, individual project, presentation, assignment, essay exam and oral exam.

Table 30

Percentage Distribution of the Students' Preferences for Midterm and Final Exam Assessment Techniques

Assessment Techniques	For Midterm			For Final		
	N	*%*	Order	*N*	*%*	Order
Individual project	104	0.32	5	117	0.36	4
Group project	141	0.44	3	123	0.38	3
Assignments	63	0.20	6	83	0.26	6
Follow-up tests	196	0.61	2	164	0.51	2
Presentation	135	0.42	4	106	0.33	5
Essay exam	37	0.12	7	38	0.12	7
Multiple-choice test	219	0.68	1	240	0.75	1
Classroom participation	140	0.44	3	114	0.36	4
Oral exam	8	0.02	9	13	0.04	8
Others	12	0.04	8	4	0.01	9

4.1.5. Needs Regarding Development and Learning Course's Objectives, Content, Teaching-Learning Process and Assessment Techniques According to the Recent Graduates Who Have Been Working as Teachers

Concerning the identification of needs regarding the course from the graduates' points of view, a needs assessment questionnaire similar to the one used for the undergraduate students (the sophomore, junior and senior students) was developed. The questionnaire was sent to graduates via e-mail and of them, only 28 responded. 16 of them were one-year and the others were two-year experienced teachers so they were novice teachers. Descriptive statistical techniques such as percentage distribution, mean, median, mode and standard deviation were used in data analysis. In the presentation of the findings, similar subheadings in the preceding section were followed.

4.1.5.1. Objectives of the Course

First of all, to what degree the course objectives are important was asked to graduates. In this way, objectives that need to be covered in the course from the graduates' points of view were strived to be determined. The results are summarized in Table 31.

It was noticed that majority of the graduates agreed that almost all of the objectives were *important* or *very important*. The objectives indicated generally as *unimportant, little* or *moderately important* were those: "to compare different theories regarding cognitive development (Obj10, 54% in total)" and "to distinguish differences and similarities among cognitivist theories (Obj43, 64% in total)". For the objective "to determine differences between cognitivist and behaviorist approaches (Obj46)", 50 % of the graduates in total thought that it was *important* or *very important*, while the other half responded it as *not important, little important* or *moderately important*. This result revealed that the graduates did not take comparing and distinguishing theories or approaches about cognitive development and cognitivist learning theories into consideration seriously. Actually, when data was scrutinized in detail, it was noted that compared to the lower order objectives at remember and understand level, there was a slight decline in the number of graduates who indicated *important* or *very important* for higher order objectives such as comparing different theorems/approaches in a topic, distinguishing similarities and

126

differences among them, and determine strengths and weaknesses of the approaches. The similar reaction had been also seen in the results obtained from the undergraduate students but the decline herein was much more explicit.

Table 31

Percentage Distribution and Descriptive Statistics of the Graduates' Responses toward the Importance of the Course Objectives

Objectives	% unimportant	little important	moderately important	important	very important	N	M	Mdn	Mode	SD
Obj1	3.60	3.60	10.70	28.60	53.60	28	4.25	5	5	1.04
Obj2	-	-	10.70	25.00	64.30	28	4.54	5	5	0.69
Obj3	3.60	-	7.10	46.40	42.90	28	4.25	4	4	0.89
Obj4	3.60	-	7.10	42.90	46.40	28	4.29	4	5	0.90
Obj5	-	7.10	-	21.40	71.40	28	4.57	5	5	0.84
Obj6	-	3.70	-	33.30	63.00	27	4.56	5	5	0.70
Obj7	-	3.60	3.60	39.30	53.60	28	4.43	5	5	0.74
Obj8	-	3.60	14.30	39.30	42.90	28	4.21	4	5	0.83
Obj9	3.60	10.70	28.60	39.30	17.90	28	3.57	4	4	1.03
Obj10	10.70	10.70	32.10	32.10	14.30	28	3.29	3	3. 4	1.18
Obj11	-	3.60	7.10	35.70	53.60	28	4.39	5	5	0.79
Obj12	-	-	7.40	14.80	77.80	27	4.7	5	5	0.61
Obj13	-	-	3.60	32.10	64.30	28	4.61	5	5	0.57
Obj14	-	-	-	32.10	67.90	28	4.68	5	5	0.48
Obj15	3.80	11.50	11.50	38.50	34.60	26	3.88	4	4	1.14
Obj16	7.40	14.80	22.20	33.30	22.20	27	3.48	4	4	1.22
Obj17	7.40	3.70	14.80	48.10	25.90	27	3.81	4	4	1.11
Obj18	3.70	3.70	11.10	51.90	29.60	27	4	4	4	0.96
Obj19	3.80	-	7.70	46.20	42.30	26	4.23	4	4	0.91
Obj20	-	-	-	21.40	78.60	28	4.79	5	5	0.42
Obj21	3.60	-	17.90	28.60	50.00	28	4.21	4.5	5	1.00
Obj22	3.60	-	28.60	32.10	35.70	28	3.96	4	5	1.00
Obj23	-	-	3.70	29.60	66.70	27	4.63	5	5	0.57
Obj24	-	-	3.60	35.70	60.70	28	4.57	5	5	0.57
Obj25	-	-	7.10	32.10	60.70	28	4.54	5	5	0.64

Table 31 *(Continued)*

Objectives	unimportant	little important	moderately important	important	very important	N	M	Mdn	Mode	SD
			%							
Obj26	-	-	10.70	42.90	46.40	28	4.36	4	5	0.68
Obj27	-	-	3.60	25.00	71.40	28	4.68	5	5	0.55
Obj28	-	11.10	14.80	29.60	44.40	27	4.07	4	5	1.04
Obj29	-	14.80	18.50	29.60	37.00	27	3.89	4	5	1.09
Obj30	-	-	3.60	35.70	60.70	28	4.57	5	5	0.57
Obj31	-	3.70	3.70	29.60	63.00	27	4.52	5	5	0.75
Obj32	-	-	-	25.90	74.10	27	4.74	5	5	0.45
Obj33	-	-	-	32.10	67.90	28	4.68	5	5	0.48
Obj34	-	7.10	21.40	50.00	21.40	28	3.86	4	4	0.85
Obj35	-	10.70	32.10	32.10	25.00	28	3.71	4	3. 4	0.98
Obj36	-	-	32.10	35.70	32.10	28	4	4	4	0.82
Obj37	-	14.80	25.90	33.30	25.90	27	3.7	4	4	1.03
Obj38	3.80	-	15.40	50.00	30.80	26	4.04	4	4	0.92
Obj39	4.00	-	16.00	52.00	28.00	25	4	4	4	0.91
Obj40	3.80	-	26.90	38.50	30.80	26	3.92	4	4	0.98
Obj41	7.70	11.50	23.10	42.30	15.40	26	3.46	4	4	1.14
Obj42	3.60	7.10	28.60	42.90	17.90	28	3.64	4	4	0.99
Obj43	10.70	14.30	39.30	21.40	14.30	28	3.14	3	3	1.18
Obj44	3.70	11.10	11.10	44.40	29.60	27	3.85	4	4	1.10
Obj45	3.60	10.70	25.00	46.40	14.30	28	3.57	4	4	1.00
Obj46	10.70	7.10	32.10	32.10	17.90	28	3.39	3.5	3. 4	1.20
Obj47	-	-	-	25.00	75.00	28	4.75	5	5	0.44
Obj48	-	-	10.70	17.90	71.40	28	4.61	5	5	0.69
Obj49	3.60	7.10	25.00	25.00	39.30	28	3.89	4	5	1.13
Obj50	7.10	14.30	17.90	28.60	32.10	28	3.64	4	5	1.28
Obj51	-	-	-	16.00	84.00	25	4.84	5	5	0.37
Obj52	-	-	-	25.00	75.00	28	4.75	5	5	0.44
Obj53	-	-	-	22.20	77.80	27	4.78	5	5	0.42
Obj54	-	-	14.30	35.70	50.00	28	4.36	4.5	5	0.73
Obj55	-	3.70	3.70	22.20	70.40	27	4.59	5	5	0.75
Obj56	-	-	3.70	29.60	66.70	27	4.63	5	5	0.57
Obj57	-	-	3.60	46.40	50.00	28	4.46	4.5	5	0.58

128

In addition, to what extent they think that they attained these objectives throughout this course was also asked to the graduates. They were one or two year-experienced teachers. Therefore, it was thought that they would evaluate themselves more properly. However, there can be a doubt that they might have gained these skills owing to their teaching experiences. In order to hinder this doubt, these novice teachers were selected. The results are shown in Table 32 and Table 33.

Table 32

Percentage Distribution and Descriptive Statistics of the Graduates' Responses toward Their Attainment of the Objectives throughout This Course

Objectives	never	little	undecided	sufficiently	completely	N	M	Mdn	Mode	SD
			%							
Obj1	-	42.90	-	42.90	14.30	28	3.29	4	2, 4	1.18
Obj2	-	28.60	7.10	50.00	14.30	28	3.50	4	4	1.07
Obj3	-	32.10	7.10	50.00	10.70	28	3.39	4	4	1.07
Obj4	3.60	14.30	17.90	53.60	10.70	28	3.54	4	4	1.00
Obj5	-	21.40	7.10	53.60	17.90	28	3.68	4	4	1.02
Obj6	3.70	22.20	11.10	48.10	14.80	27	3.48	4	4	1.12
Obj7	7.10	28.60	14.30	42.90	7.10	28	3.14	3.5	4	1.15
Obj8	3.60	25.00	21.40	42.90	7.10	28	3.25	3.5	4	1.04
Obj9	7.10	32.10	25.00	35.70	-	28	2.89	3	4	0.99
Obj10	10.70	35.70	28.60	25.00	-	28	2.68	3	2	0.98
Obj11	-	25.00	25.00	50.00	-	28	3.25	3.5	4	0.84
Obj12	3.60	14.30	17.90	57.10	7.10	28	3.50	4	4	0.96
Obj13	7.10	21.40	21.40	46.40	3.60	28	3.18	3.5	4	1.06
Obj14	10.70	32.10	14.30	28.60	14.30	28	3.04	3	2	1.29
Obj15	16.00	28.00	12.00	40.00	4.00	25	2.88	3	4	1.24
Obj16	25.90	18.50	11.10	37.00	7.40	27	2.81	3	4	1.39
Obj17	14.80	29.60	11.10	40.70	3.70	27	2.89	3	4	1.22
Obj18	14.80	25.90	11.10	40.70	7.40	27	3.00	3	4	1.27
Obj19	22.20	18.50	14.80	40.70	3.70	27	2.85	3	4	1.29
Obj20	3.60	17.90	10.70	39.30	28.60	28	3.71	4	4	1.18
Obj21	7.40	14.80	25.90	33.30	18.50	27	3.41	4	4	1.19
Obj22	7.40	18.50	25.90	33.30	14.80	27	3.30	3	4	1.17
Obj23	7.10	17.90	17.90	42.90	14.30	28	3.39	4	4	1.17

Table 32 (*Continued*)

Objectives	never	little	undecided	sufficiently	completely	N	M	Mdn	Mode	SD
				%						
Obj24	3.60	21.40	10.70	46.40	17.90	28	3.54	4	4	1.14
Obj25	3.60	21.40	21.40	42.90	10.70	28	3.36	4	4	1.06
Obj26	7.10	28.60	21.40	35.70	7.10	28	3.07	3	4	1.12
Obj27	-	25.00	10.70	53.60	10.70	28	3.50	4	4	1.00
Obj28	3.70	29.60	7.40	48.10	11.10	27	3.33	4	4	1.14
Obj29	7.40	25.90	11.10	44.40	11.10	27	3.26	4	4	1.20
Obj30	-	28.60	10.70	50.00	10.70	28	3.43	4	4	1.03
Obj31	-	17.90	10.70	60.70	10.70	28	3.64	4	4	0.91
Obj32	-	21.40	7.10	64.30	7.10	28	3.57	4	4	0.92
Obj33	7.10	21.40	17.90	46.40	7.10	28	3.25	4	4	1.11
Obj34	-	17.90	28.60	39.30	14.30	28	3.50	4	4	0.96
Obj35	7.10	25.00	25.00	25.00	17.90	28	3.21	3	2. 3	1.23
Obj36	-	39.30	21.40	35.70	3.60	28	3.04	3	2	0.96
Obj37	3.60	35.70	25.00	32.10	3.60	28	2.96	3	2	1.00
Obj38	7.40	25.90	14.80	51.90	-	27	3.11	4	4	1.05
Obj39	7.40	33.30	14.80	44.40	-	27	2.96	3	4	1.06
Obj40	7.70	38.50	7.70	46.20	-	26	2.92	3	4	1.09
Obj41	14.80	40.70	22.20	22.20	-	27	2.52	2	2	1.01
Obj42	10.70	32.10	7.10	46.40	3.60	28	3.00	3.5	4	1.19
Obj43	3.60	42.90	25.00	28.60	-	28	2.79	3	2	0.92
Obj44	3.70	33.30	14.80	48.10	-	27	3.07	3	4	1.00
Obj45	3.60	35.70	21.40	35.70	3.60	28	3.00	3	2. 4	1.02
Obj46	7.10	35.70	14.30	35.70	7.10	28	3.00	3	2. 4	1.16
Obj47	-	11.10	11.10	48.10	29.60	27	3.96	4	4	0.94
Obj48	-	14.80	11.10	55.60	18.50	27	3.78	4	4	0.93
Obj49	7.40	29.60	18.50	40.70	3.70	27	3.04	3	4	1.09
Obj50	7.40	22.20	22.20	44.40	3.70	27	3.15	3	4	1.06
Obj51	-	7.70	7.70	61.50	23.10	26	4.00	4	4	0.80
Obj52	-	7.10	14.30	60.70	17.90	28	3.89	4	4	0.79
Obj53	-	7.10	3.60	75.00	14.30	28	3.96	4	4	0.69
Obj54	-	21.40	10.70	53.60	14.30	28	3.61	4	4	0.99
Obj55	-	25.00	10.70	60.70	3.60	28	3.43	4	4	0.92
Obj56	-	25.90	11.10	55.60	7.40	27	3.44	4	4	0.97
Obj57	-	29.60	3.70	55.60	11.10	27	3.48	4	4	1.05

According to the results presented in Table 32, median value for 35 objectives was equal to 4, which means that at least half of the graduates were *sufficiently* or *completely* attained these objectives during this course. However, they had problems with the other 22 objectives. Especially, for the objective "to analyze differences and similarities between social learning theory and behaviorist and cognitivist learning theories (Obj41)", 55 % of the graduates in total indicated that they *never* or *little* gained this skill in the course. The other objectives that they feel incompetent with the highest percentages in total (more than 40 %) are listed in Table 33. It was identified that these graduates could not have adequately attained the objectives related to linguistic development, social learning theory, cognitivist learning theory and related to determining similarities, differences, strength and weakness among learning theories.

Table 33

The List of the Objectives That Were Never or Little Attained Throughout This Course by More Than 40 % of the Graduates in Total

Objective no	Objectives
	Objectives Regarding the Basic Concepts in Development and Learning
1	to know basic concepts regarding development (43 %)
10	to compare different theories regarding cognitive development (46 %)
14	to prepare educational environment towards improving sts' congitive development level (43 %)
15	to know linguistic development processes (44 %)
16	to understand different approaches regarding linguistic development (44 %)
17	to follow sts' linguistic development process (44 %)
18	to understand individual differences among sts in terms of linguistic development (41 %)
19	to prepare educational environment towards improving sts' linguistic development level (41 %)
	Objectives regarding Learning
39	to use social learning theory's principles in teaching-learning environment (41 %)
40	to determine strengths and weaknesses of the social learning theory (46 %)
41	to analyze differences and similarities between social learning theory and behaviorist and cognitivist learning theories (55 %)
42	to explain learning according to cognitivist approach (43 %)
43	to distinguish differences and similarities among cognitivist theories (47 %)
46	to determine differences between cognitivist and behaviorist approaches (43 %)

4.1.5.2. Content of the Course

The responses as regards the importance of the objectives highlighted which topics are important for the graduates. Graduates mostly agreed on the necessity of the attainment of all objectives. Based on the graduates' responses it can be inferred that the topics to which the listed objectives address should be involved in the content. Indeed, these results were the same with those obtained from the undergraduates; thus, the topics given previously in Table 25 are valid for graduates.

4.1.5.3. Teaching-Learning Process of the Course

Regarding teaching-learning process of the course, two questions regarding the listed activities/strategies in the questionnaire were asked to the graduates (see Table 26 for the activity/strategy list). The former one was the same question that was asked to the undergraduate students about the effectiveness of the activities/strategies for **teaching and learning**. The latter one was about to what degree these activities were effective in terms of **improving thinking skills**. As the graduates would not be able to remember, the frequency of activities/strategies throughout the course was not asked to them. It was only aimed to determine effective activities/strategies for learning, teaching and improving thinking skills from graduates' points of view. Yet, if these determined activities/strategies had been *never* or *rarely* used in the course according to the undergraduate students' responses, they were deemed to be the needed ones.

The data obtained by the first and second questions are given in Table 34 and Table 35, respectively. Descriptive statistics and percentage distribution of data in these tables revealed that except for "teaching-learning process based on the teacher-centered approach (Act2)" and "use of various sources(Act27)", almost all the other activities/strategies were considered *effective* or *very effective* in both **teaching-learning** and **improving thinking skills** by the majority of the graduates. Besides, nearly one third of the graduates also indicated that "presentation of topics by sts (Act7, 36%)" and "doing comparison among theories (Act12, 31%)" were *moderately effective* for **teaching and learning**. Interestingly, 35 % of the graduates agreed that ""doing comparison among theories (Act12)" was *moderately effective* for **improving thinking skills**. Although comparison activity is one of thinking skills activities, it seems that almost a third of the graduates did not think so.

Table 34

Percentage Distribution and Descriptive Statistics of the Graduates' Responses toward the Effectiveness of Activities in Terms of Teaching and Learning

Activities/ Strategies	ineffective	little effective	moderately effective	effective	very effective	N	M	Mdn	Mode	SD
			%							
Act1		3.60	3.60	25.00	67.90	28	4.57	5	5	0.74
Act2	7.10	42.90	28.60	14.30	7.10	28	2.71	2.5	2	1.05
Act3	3.60	3.60	7.10	25.00	60.70	28	4.36	5	5	1.03
Act4			3.60	17.90	78.60	28	4.75	5	5	0.52
Act5				21.40	78.60	28	4.79	5	5	0.42
Act6			3.60	28.60	67.90	28	4.64	5	5	0.56
Act7		7.10	35.70	32.10	25.00	28	3.75	4	3	0.93
Act8			7.10	17.90	75.00	28	4.68	5	5	0.61
Act9			3.60	10.70	85.70	28	4.82	5	5	0.48
Act10		7.10	10.70	28.60	53.60	28	4.29	5	5	0.94
Act11		3.60	3.60	28.60	64.30	28	4.54	5	5	0.74
Act12		3.80	30.80	30.80	34.60	26	3.96	4	5	0.92
Act13			11.10	22.20	66.70	27	4.56	5	5	0.70
Act14	3.60		14.30	35.70	46.40	28	4.21	4	5	0.96
Act15		7.40	3.70	44.40	44.40	27	4.26	4	4(a)	0.86
Act16		3.70	3.70	14.80	77.80	27	4.67	5	5	0.73
Act17	3.70		11.10	25.90	59.30	27	4.37	5	5	0.97
Act18		3.70	18.50	48.10	29.60	27	4.04	4	4	0.81
Act19		7.70	19.20	30.80	42.30	26	4.08	4	5	0.98
Act20	3.60	3.60	10.70	42.90	39.30	28	4.11	4	4	0.99
Act21	7.10	10.70	17.90	25.00	39.30	28	3.79	4	5	1.29
Act22			10.70	25.00	64.30	28	4.54	5	5	0.69
Act23		3.60	17.90	32.10	46.40	28	4.21	4	5	0.88
Act24			10.70	35.70	53.60	28	4.43	5	5	0.69
Act25			7.10	14.30	78.60	28	4.71	5	5	0.60
Act26		3.60	10.70	46.40	39.30	28	4.21	4	4	0.79
Act27	7.10	14.30	42.90	21.40	14.30	28	3.21	3	3	1.10
Act28		7.10	17.90	35.70	39.30	28	4.07	4	5	0.94
Act29		7.40	18.50	48.10	25.90	27	3.93	4	4	0.87
Act30			7.10	25.00	67.90	28	4.61	5	5	0.63
Act31	3.70		11.10	18.50	66.70	27	4.44	5	5	0.97
Act32	3.70	14.80	11.10	55.60	14.80	27	3.63	4	4	1.04
Act33	10.70	14.30	14.30	32.10	28.60	28	3.54	4	4	1.35
Act34	3.60		14.30	28.60	53.60	28	4.29	5	5	0.98
Act35			7.40	22.20	70.40	27	4.63	5	5	0.63

Table 35

Percentage Distribution and Descriptive Statistics of the Graduates' Responses toward the Effectiveness of Activities in Terms of Improving Thinking Skills

Activities/ Strategies	ineffective	little effective	moderately effective	effective	very effective	N	M	Mdn	Mode	SD
Act1		3.70	7.40	18.50	70.40	27	4.56	5	5	0.80
Act2	14.80	48.10	14.80	11.10	11.10	27	2.56	2	2	1.22
Act3	3.60	7.10	3.60	21.40	64.30	28	4.36	5	5	1.10
Act4			10.70	10.70	78.60	28	4.68	5	5	0.67
Act5			3.60	21.40	75.00	28	4.71	5	5	0.54
Act6		3.60	7.10	25.00	64.30	28	4.50	5	5	0.79
Act7		14.30	25.00	35.70	25.00	28	3.71	4	4	1.01
Act8			3.60	28.60	67.90	28	4.64	5	5	0.56
Act9			10.70	14.30	75.00	28	4.64	5	5	0.68
Act10	3.60	7.10	10.70	28.60	50.00	28	4.14	4.5	5	1.11
Act11		3.60	7.10	25.00	64.30	28	4.50	5	5	0.79
Act12		7.70	34.60	23.10	34.60	26	3.85	4	3. 5	1.01
Act13			14.80	22.20	63.00	27	4.48	5	5	0.75
Act14	3.60	3.60	21.40	28.60	42.90	28	4.04	4	5	1.07
Act15	3.70	3.70	11.10	29.60	51.90	27	4.22	5	5	1.05
Act16		3.70	7.40	22.20	66.70	27	4.52	5	5	0.80
Act17	3.70		14.80	25.90	55.60	27	4.30	5	5	0.99
Act18		7.40	18.50	40.70	33.30	27	4.00	4	4	0.92
Act19	3.80	11.50	19.20	26.90	38.50	26	3.85	4	5	1.19
Act20	3.60	10.70	10.70	28.60	46.40	28	4.04	4	5	1.17
Act21	10.70	14.30	17.90	17.90	39.30	28	3.61	4	5	1.42
Act22		3.60	10.70	25.00	60.70	28	4.43	5	5	0.84
Act23		7.10	17.90	35.70	39.30	28	4.07	4	5	0.94
Act24		7.10	14.30	25.00	53.60	28	4.25	5	5	0.97
Act25		3.60	7.10	21.40	67.90	28	4.54	5	5	0.79
Act26	3.60	3.60	17.90	39.30	35.70	28	4.00	4	4	1.02
Act27	7.40	14.80	33.30	25.90	18.50	27	3.33	3	3	1.18
Act28		7.40	18.50	40.70	33.30	27	4.00	4	4	0.92
Act29		7.70	26.90	34.60	30.80	26	3.88	4	4	0.95
Act30			14.30	21.40	64.30	28	4.50	5	5	0.75
Act31	3.70		11.10	29.60	55.60	27	4.33	5	5	0.96
Act32	3.70	14.80	18.50	44.40	18.50	27	3.59	4	4	1.08
Act33	14.30	14.30	10.70	32.10	28.60	28	3.46	4	4	1.43
Act34	7.10	7.10	7.10	25.00	53.60	28	4.11	5	5	1.26
Act35			14.80	14.80	70.40	27	4.56	5	5	0.75

Additionally, the most 10 effective activities for **teaching and learning** and **improving thinking skills** according to the graduates were ranked as to mean values and given in Table 36. It was realized that thinking based activities such as "activities towards developing problem solving skills (Act5)", "activities towards developing creative thinking skills (Act4)" and "thinking skills activities (Act25)" were involved among the first five most effective activities for **learning and teaching**. When the most 10 effective activities in terms of **improving thinking skills** were determined, the same activities were revealed but in different order. An activity "relating topics with each other (Act11)" was added, since it had the same mean value with the item "giving responsibilities to sts in some activities (Act6)".

On the other hand, "activities towards developing critical thinking skills (Act3)" was expected to be taken part among the most effective 10 activities for **improving thinking skills**. It was surprising that when all activities were ranked by mean values, it was observed that this activity was at the 17th order as an effective activity for **teaching and learning** and 14th order as an effective activity for **improving thinking skills**.

Table 36

The Ranked List of the Most 10 Effective Activities/Strategies by Mean Values

Activities and strategies	Effectiveness for teaching and learning		Effectiveness for improving thinking skills	
	Rank	*M*	*Rank*	*M*
Providing interaction between sts and the instructor	1	4.82	4	4.64
Activities towards developing problem solving skills	2	4.79	1	4.71
Activities towards developing creative thinking skills	3	4.75	2	4.68
Thinking skills activities	4	4.71	7	4.54
Providing active classroom participation	5	4.68	3	4.64
Discussion/disputation about topics	6	4.67	8	4.52
Giving responsibilities to sts in some activities	7	4.64	10	4.50
Drama	8	4.63	6	4.56
Watching video	9	4.61	9	4.50
Teaching-learning process based on the student-centered approach	10	4.57	5	4.56
Relating topics with each other	-	-	10	4.50

Besides these, according to the results obtained from the undergraduates' questionnaire, most of these effective activities/strategies had been *never* or *rarely* used in the course. Thus, they were deemed especially as the needed

activities/strategies as to the graduates and are presented in Table 37. It was observed that these were very similar to those identified from the undergraduates' responses. Meantime, while the needed ones would be taken into account in the redesign of the course, the other effective ones that were applied in the course often or always should be lasted in the course.

Table 37

The List of the Needed Activities/Strategies According To the Graduates' Responses

	Activities and Strategies
1	Teaching-learning process based on the student-centered approach
3	Activities towards developing critical thinking skills
4	Activities towards developing creative thinking skills
5	Activities towards developing problem solving skills
7	Presentation of topics by sts
10	Providing interaction among sts
14	Relating the course with the other pedagogical courses
15	Questioning technique
16	Discussion/debate about topics
17	Search and discussion of articles related to topic
18	Observation of persons and learning environment in terms of development and learning theories
19	Discussion of these observations
20	Interviewing with persons from different age groups to understand their personality, moral and social development
21	Discussion of these interviews
22	Case studies
23	Concept map of concepts in a topic
24	Conducting research
25	Thinking skills activities
28	Use of transparencies
29	Use of worksheets
30	Watching video
31	Feedback about students' performance
32	Invitation of visitor teachers/academicians
33	Peer evaluation

4.1.5.4. Assessment Techniques of the Course

Data as regards the graduates' preferences about assessment techniques are presented in Table 38. The techniques were ranked based on the frequency of being preferred. For the midterm exam, the most preferred one was individual project and presentation with 54 % but for the final exam, individual project was the first preference and presentation came the second one. Classroom participation was secondly preferred for midterm and fourth choice for the final exam. As the third choice for midterm, group project, assignments, follow-up test and multiple-choice test shared the same order. However, for final exam, only multiple-choice test was

indicated as the third choice. Oral and essay exam were the least preferred techniques among the other ones.

Table 38

Percentage of the Graduates' Preferences for Midterm and Final Exam Assessment Techniques

Assessment Techniques	For Midterm			For Final		
	N	*%*	Order	*N*	*%*	Order
Individual project	15	0.54	1	19	0.68	1
Group project	10	0.36	3	8	0.29	5
Assignments	10	0.36	3	7	0.25	6
Follow-up tests	10	0.36	3	5	0.18	7
Presentation	15	0.54	1	12	0.43	2
Essay exam	2	0.07	4	4	0.14	8
Multiple-choice test	10	0.36	3	11	0.39	3
Classroom participation	14	0.50	2	10	0.36	4
Oral exam	2	0.07	4	1	0.04	10
Others	1	0.04	5	2	0.07	9

4.2. Results on Input Evaluation

Input evaluation is carried out in order to "assess alternative approaches to meeting needs as a means of planning programs and allocating resources (Stufflebeam, 2000, p.279)". Since the context evaluation enlightened the needs and instructional problems, in this input evaluation stage of the study, Development and Learning course was redesigned by evaluating instructional strategies and resources so as to meet the expressed needs and solve the identified instructional problems. For this purpose, Kemp, Morrison, and Ross's (1998) Instructional Design model was used (see Figure 3).
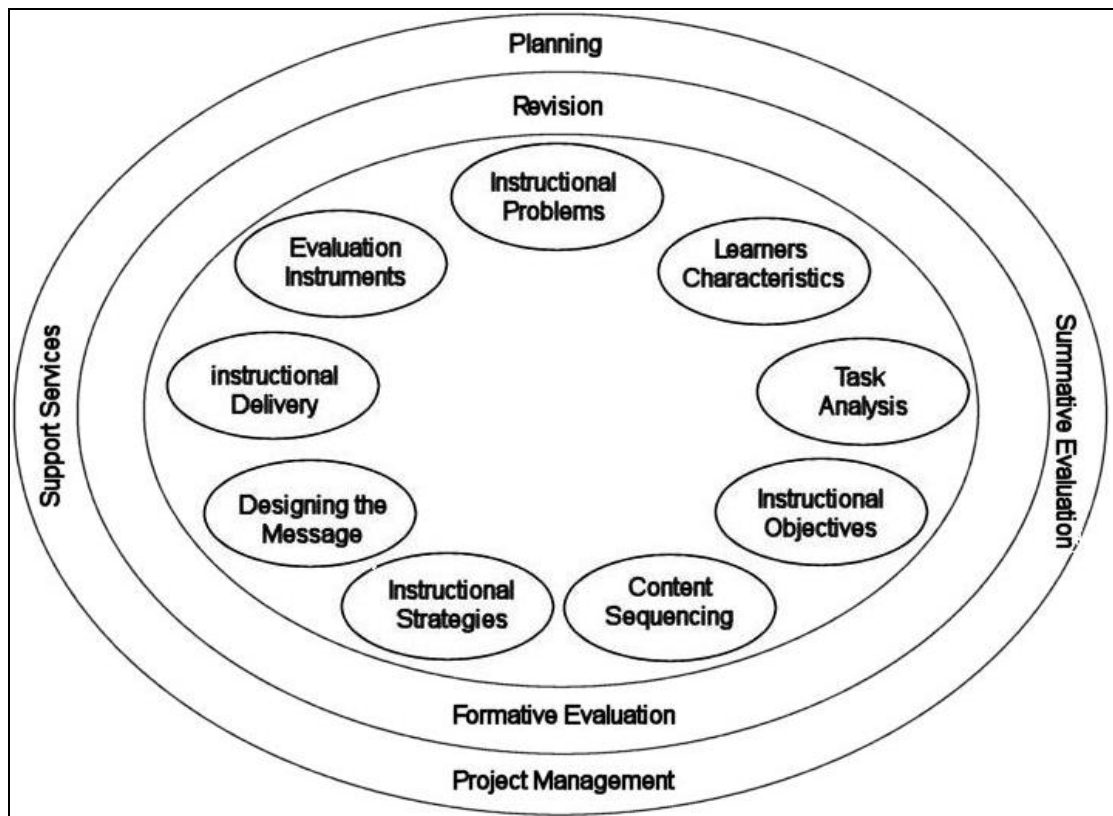
Figure 4. Elements of the instructional design plan

Source: Kemp et al. (1998, p.6)

One of the basic reasons for utilizing this model was that it allows the evaluation of existing instructional resources and strategies which are the subjects of input evaluation. This model is also called as a student-centered instructional design model as it takes learners' preferences into account in designing instruction. Additionally, it allows flexibility in the order of design stages because all steps are intertwined and provides back-and-forth revision among the stages. It also includes formative evaluation to revise instruction during implementation and summative evaluation to determine effectiveness at the end of implementation. Moreover, it provides a systematic design process, which has to be followed in order to create an effective design. This means having a reasonable method of identifying, developing and evaluating a set of strategies in order to attain a particular instructional goal (Kemp et al., 1998).

For these reasons, this model was followed in the study as a guideline with small changes. In light of the model, the sequence of the instructional design process of the study was;

1. Needs Assessment
   - Instructional Problems
   - Learners' Preferences
2. Task Analysis & Content Sequencing
3. Instructional Objectives
4. Instructional Strategies
5. Instructional Resources
6. Developing Evaluation Instruments

4.2.1. The Design Process

In this section, each step in designing 14-week Development and Learning course was explained.

4.2.1.1. Needs Assessment

The purpose of this step of the design was twofold: to identify instructional problems and to define learner preferences. While Kemp et al. (1998) suggest determining learner characteristics such as academic information, personal and social characteristics, characteristics of diverse learners, and their learning styles, this study was limited to define only learner preferences regarding this course, from teaching-learning strategies to assessment techniques.

Three approaches are proposed for identifying instructional problems by Kemp et al. (1998): needs assessment, goal analysis and performance assessment. The context evaluation stage of the study was already based on a needs assessment study taken various stakeholders (instructor, graduates, students, etc.) into account. The results disclosed not only important problems and needs but also the students' and graduates' preferences toward all aspects of the course (objectives, content, teaching-learning activities/strategies, and assessment). Therefore, context evaluation results illuminated this design process.

The context evaluation results regarding learner preferences are given as follows:

For objectives;
- The students and graduates consider that almost all objectives are important to be attained.

139

- It was also noticed that the students especially gave much more importance to the objectives towards putting theory into practice such as understanding students' differences, helping students' development, preparing appropriate learning environment, applying what was learned to classroom environment.

- However, while their proportion was not high, some students and graduates expressed *little important* or *unimportant* for higher order objectives like understanding different theories/approaches in a topic, comparing them, distinguishing similarities and differences among them, and determine strengths and weaknesses of the approaches.

For content;

- Considering the objectives important by the majority of the respondents implied that the corresponding course topics were also important.

- The topics underlying the objectives were Development (Basic concepts regarding development, physical and psychomotor, cognitive, linguistic, moral and intellectual development) and Learning (Basic concepts regarding learning, behaviorist and cognitivist approaches to learning, and motivation).

For teaching-learning process;

- Except for teacher-centered activities, use of transparencies, and invitation of visitors, all the other activities/strategies were considered effective for learning

- Especially, follow-up tests, active participation and interaction in classroom, thinking skills activities, giving responsibilities to students in some activities, group work, student-centered activities, drama, discussion, relating topics with each other, and doing comment on topic, case and phenomenon were determined as the most effective ones.

- For effective instruction, the students and graduates believe in the necessity of the student-centered activities (drama, discussion, and group work also included), thinking skill based activities, interaction and participation in the classroom, and follow-up tests.

For assessment techniques;

- While the multiple-choice test was mostly preferred by the students, the graduates stressed the individual projects at most for both midterm and final exam.

140

- Follow-up tests, classroom participation, group project and assignment were the other mostly preferred alternatives.
- On the other hand, essay exam and oral exam were the least preferred techniques compared to the other ones.

The context evaluation results addressing instructional problems are given as follows:

- Although it was agreed in general that these objectives and content were of importance, not all but at least half of the students and graduates did not feel competent in the attainment of them, particularly, of those related to theoretical knowledge and necessitating higher order skills such as distinguishing related theories or determining similarities and differences.
- The results displayed that most of the activities expressed *effective/very effective* for learning by the respondents had been *never, rarely* or *sometimes* applied in the course.

It can be deduced from these results that a new course of action should be taken in teaching-learning process of the course in order to overcome these problems. In this regard, as a new instructional approach, critical thinking based instruction was predetermined as its importance in effective instruction, in teacher education and even in contemporary life was stressed by the related literature (e.g., Halonen et al., 2002; McCallister, 2004; Paul et al., 1997; Pithers & Soden, 2000; Raths et al., 1967; Semerci, 2003; Şahinel, 2005). As it was mentioned in the literature review chapter of the study, there are two main approaches in teaching critical thinking: skills and infusion approaches (Beyer, 1988a; Burden, 1998; Maclure, 1991; Nisbet, 1993). In this study, infusion approach by which thinking skills are incorporated into subject matter was regarded in redesigning Development and Learning course as to critical thinking based instruction. This approach requires enriching teaching-learning process with critical thinking promoting activities, strategies and tasks (Burden, 1998). In this regard, the related literature led to determine effective activities. But at the same time, the context evaluation results regarding teaching-learning process that enlightened the needed effective activities/strategies for learning, teaching and improving thinking skills from the students' and graduates' points of view were also taken into account. Hereby, it was aimed to create an effective learning environment

equiped with these activities/strategies stimulating the attainment of the objectives and advancing critical thinking.

4.2.1.2. Task Analysis and Concept Sequencing

Task analysis was conducted in order to define the content required to solve instructional problems and to meet the needs. This analysis yielded an outline of content and served as an input for developing instructional objectives. Kemp et al. (1998) introduce three techniques for conducting task analysis: topic analysis, procedural analysis and critical incident method. In this study topic analysis method was used.

Concerning "Development and Learning course" whose name has been changed for Elementary School Teacher Education program as Educational Psychology since 2006-2007 academic year (CHE, n.d.c), CHE determined its content as "education-psychology relationship, definition and functions of educational psychology, basic concepts regarding development and learning, development characteristics (physical, cognitive, emotional, social and moral development), learning theories, implications of learning theories for teaching-learning processes, factors affecting learning (motivation, individual differences, group dynamics and impact of these factors on teaching-learning process)" (CHE, n.d.d). This statement delineates the course in general without giving detailed content; so, the details are left to the instructor of the course.

After various "Development and Learning" and "Educational Psychology" text books and syllabuses were examined, it was ascertained that there are two main topics: *development* and *learning*. However, both topics include many topics within self. For example, according to the examination of text books and syllabuses, topics regarding development can be:

- Development (Definition of development; Bases of Development, Principles of Development, Factors Affecting Development)
- Physical and Psychomotor Development (Prenatal development, Physical and Psychomotor Development at Infancy Period, at Preschool Period, at Elementary School Period, and at Adolescent Period, Educational Implications of Physical and Psychomotor Development into Learning Environment, Educational Measures Taken for Physical and Psychomotor Development, Individual Differences in Physical and Psychomotor Development,)

- Cognitive Development (Intelligence and Characteristics of Intelligence, Basic Piagetian Concepts, Piaget's Cognitive Development Theory, Cognitive Development Periods, Vygotsky's Social Perspective on Cognitive Development, Language Development, Educational Implications of Cognitive and Language Development into Learning Environment, Educational Measures Taken for Cognitive Development, Individual Differences in Cognitive Development,)

- Emotional Development (Emotion and Attributes of Emotion, Emotion Types and Their Development, Educational Measures Taken for Emotional Development, Educational Implications of Emotional Development into Learning Environment, Individual Differences in Emotional Development,)

- Social Development (Characteristics of Social Development, Social Development at Preschool Period, at Elementary School Period, and at Adolescent Period, Educational Measures Taken for Social Development, Educational Implications of Social Development into Learning Environment Individual Differences in Social Development,)

- Sexual Development (Characteristics of Sexual Development, Sexual Development at Childhood Period and at Adolescent Period, Educational Implications of Sexual Development into Learning Environment, Educational Measures Taken for Sexual Development, Individual Differences in Sexual Development)

- Personality Development (Freud and Psychoanalytic Theory, Erickson and Psychosocial Development Periods, Educational Implications of Personality Development into Learning Environment)

- Moral Development (Piaget and Moral Development Periods, Kohlberg and Moral Development Periods, Gilligan's View of Moral Development, Educational Implications of Moral Development into Learning Environment, Educational Measures Taken for Moral Development, Individual Differences in Moral Development)

- Student Diversity (Impact of Culture, Socioeconomic Status, Ethnicity and Race, Language Differences, Gender, Intelligence, Learning Style, Exceptional Students)

Because of time limitation, it was not possible and reasonable to include all abovementioned topics. This outline was just demonstrated in order to show how broad these topics-development and learning- are. For this reason, in order to narrow the topics so as to be covered within a semester appropriately, a topic analysis was conducted.

Topic Analysis and Content Sequencing. There is at least one course regarding development and learning in teacher education programs administered in Turkey and around the world. For topic analysis, text books and syllabuses of these courses, which were accessed via internet and library, were examined. When the

contents were compared, it was realized that while there were differences in detail, topics regarding learning theories (Behaviorism, Cognitivism, Constructivism, Humanism), development theories (cognitive and personal-social development are more emphasized rather than physical and moral development) and motivation were fundamentally covered in almost all courses. Besides these, it was noted that topics such as instruction, research, classroom management, learning environment, learners with exceptionalities, diversities among learners and assessment topics were also addressed in some of them.

In this study, the investigated text books and syllabuses indicated and the learners' preferences explained in the context evaluation supported that there should be two basic topics covered in this course. These formed the initial outline of the topic analysis:

I.   Development

II.   Learning

Then, this outline was expanded as shown in Table 39.

Table 39

Content Outline of Development and Learning Course

Topics	Time	Week
I. DEVELOPMENT		
A. The Interrelationship among Development, Learning and Learning Environment	1 Hour	1. Week
B. The Basic Concepts Related to Development	1 Hour	
C. The Basic Principles of Development	1 Hour	
D. Factor Affecting Development		
E. Physical and Psychomotor Development	3 Hours	2. Week
1. Principles of Physical and Psychomotor Development		
2. Educational Implications of Physical and Psychomotor Development into Learning Environment		
F. Cognitive Development	3 Hours	3.Week
1. Piaget's Theory of Cognitive Development		
2. Educational Implications of Piaget's Theory		
3. Vygotsky's Theory of Cognitive Development		
4. Educational Implications of Vygotsky's Theory		
G. Moral Development	3 Hours	4.Week
1. Piaget's Theory of Moral Development		
2. Kohlberg's Theory of Moral Development		
3. Gilligan's View of Moral Development		
Educational Implications of Moral Development Ts.		

Table 39 *(Continued)*

Topics	Time	Week
H. Personality Development	3 hours	5.Week
1. Freud's Theory of Psychosexual Development		
2. Erickson's Theory of Psychosocial Development		
3. Educational Implications of Personality Dev. Ths.		
II. LEARNING		
A. The Basic Concepts in Learning	15 Min.	6.Week
B. Factors Affecting Learning	15 Min.	
C. Behavioral Approach to Learning		
1. Classical Conditioning	2,5 Hours	
i. Principles of Classical Conditioning		
ii. Educational Implications of Classical Cond.		
2. Operant Conditioning	3 Hours	8.Week[a]
i. Principles of Operant Conditioning		
ii. Educational Implications of Operant Cond.		
3. Social Learning Theory	3 Hours	9.Week
i. Principles of Social Learning Theory		
ii. Educational Implications of Social Learning		
D. Cognitive Approach to Learning	3 hours	10.Week
1. Gestalt theory		
i. Principles of Gestalt theory		
ii. Educational Implications of Gestalt Theory		
2. Information Processing theory	3 hours	11.Week
i. Principles of Information Processing Th.		
ii. Educational Implications of Inf. Proc. Th.		
3. Constructivist Learning Theory	3 hours	12.Week
i. Principles of Constructivist Learning Th.		
ii. Educational Implications of Const. Th.		
E. Humanistic approach to learning	3 hours	13. Week
1. Principles of humanistic learning theory		
2. Maslow, Rogers, Gordon		
3. Educational implications of Human. App.		
F. Motivation	3 hours	14. Week
1. The relation between motiv. and learning		
2. Intrinsic and extrinsic motivation		
3. Theories of motivation		
4. Educational implications of motivation		

[a] 7th Week is Midterm Week; thus, no topic was assigned to that week.

Then, four content structures associated with a topic analysis, which are facts, concepts, principles and procedures (Kemp et al.,1998) were examined for each main topic.

Facts: Some of the identified facts are;

- Factors affecting development

145

- Factors affecting learning
- The relation between learning and teaching
- The relation between learning and motivation
- Stages in physical, cognitive, moral, and personality development

Concepts: Some of the concepts identified in this analysis are these:

- Development, learning, teaching, maturation, readiness, motivation, behavior

Principles: Principles identified in the outline are given as follows:

- Principles of development
- Principles of physical, cognitive, moral an personality development
- Principles of learning approaches

Procedure: The procedures identified in the topic analysis are:

- The educational implications of physical, cognitive, moral and personality development
- The educational implications of behaviorist, cognitivist, and humanistic approaches to learning
- The educational implications of motivation

Next, each subtopic under Development and Learning were analyzed in detail. An example of the "Operant Conditioning" topic is given as follows:

The outline of this topic previously was covering:

1. Operant conditioning

   i. Principles of operant conditioning

   ii. Educational implications of operant conditioning

After detailed analysis, it was outlined as follows:

1. Operant conditioning

   A. Description of operant conditioning process

   B. Principles and concepts of operant conditioning

      i. Reinforcement

      ii. Punishment

      iii. Generalization

      iv. Control of stimuli

   C. Schedules of reinforcement

      i. Positive and negative reinforcements

  ii. Continuous reinforcement

  iii. Intermittent reinforcement

    1. Interval schedule of reinforcement

    2. Ratio schedule of reinforcement

 D. Behavioral Modification

 E. Reducing or removing undesirable behaviors

  i. Satiation

  ii. Reprimand

  iii. Response cost

  iv. Social isolation/time out

 F. Educational implications of operant conditioning

Throughout this topic analysis, the topics were carefully examined and were ordered according to *concept-related sequencing*, which is proposed by Kemp et al (1998) as a method of sequencing the content. The relationships among concepts covered in a topic, the relationships among topics, the flow from simple to more abstract concepts, and the prerequisite concepts were taken into account in the concept sequencing.

4.2.1.3. Instructional Objectives

At this stage, the results gathered from the context evaluation were utilized. Initially, goals of teacher education and general objectives of the course were formed by taking the results of individual interviews with the expert from MONE, the pedagogy instructor and the vice chair of the department into account.

Regarding goals of teacher education, the vice chair of the Department of Accounting Teacher Education emphasized the development of students' affective behaviors and thinking skills by expressing the goals as "contributing to students' personality development" and "training prospective teachers who can look at students from different perspectives, analyze and reason any procedure or incidence, make interpretations and think from different point of view and have a mission". In accordance with the goals stated by MONE, the expert from the ministry indicated three goals: (1) to ensure students to gain affective behaviors like attitudes and habits as well as cognitive behaviors with reference to the basic principles of the Republic, (2) to raise good citizens of the Republic who gained basic human behaviors

contemporary life necessitates, and (3) to raise individuals who gained the requisite professional competencies and behaviors. Additionally, the pedagogy instructor specified a brief statement of the goals; "to train prospective teachers who have knowledge and skills of subject courses", "to train prospective teachers who have knowledge and skills of pedagogical courses", and "to provide opportunities to prospective teachers for teaching practice".

In sum, three functions of teacher education were stressed:

- to train prospective teachers having subject and pedagogical knowledge and teaching skills,
- to educate them to be a good citizens with good personality characteristics with reference to the basic principles of the Republic, and
- to raise thinking students.

In light of the expressed goals, concerning the main objectives of Development and Learning course, the instructor stated that the objectives are "to gain required knowledge to know persons, to know development stages", "to know learning theories, their weaknesses and strengths", and "to be able to apply learning theories into learning environments (ex. in lesson plans)". As for the expert, the objectives are "to gain skill to be able to know their students' developmental level" and "to understand learning characteristics and nature of students". The vice chair did not express any idea because she was not asked to do because of not having pedagogical education background.

By considering these expressed objectives, two primary objectives were determined. This course would contribute students

- to understand the nature of knowledge as regards human development and learning and
- to understand how to apply the knowledge in teaching practice

In redesigning Development and Learning course as to critical thinking based instruction, the development of critical thinking skills was considered as the secondary objective. Because, in a course in which critical thinking skills are integrated into a subject matter, critical thinking skills may not be improved as it is intended. Subject learning may overshadow gaining thinking skills in an academic semester, which may not be adequate for learning thinking skills requiring longer time than a semester or a course period. Indeed, in this course, critical thinking based

148

instruction was a means to reach the primary ends/objectives. It should be beared in mind that a course enriched with critical thinking skill based activities is a starting point; because if the development of teacher candidates' critical thinking skills is aimed, it should be integrated into every part of teacher education program.

Concerning instructional objectives, the context evaluation yielded that the majority of the respondents agreed on the importance of the objectives given in the questionnaire as it was mentioned at the needs assessment step of the design. A small part of the respondents did not consider the higher order objectives as important as the other ones. Nonetheless, the other majority of the respondents and the importance of the attainment of higher order thinking skills forming critical thinking could not be ignored. Therefore, all the objectives given in the questionnaire were treated as instructional objectives. Next, they were reviewed and some modifications were done. The final form of the instructional objectives was given in Appendix G. Finally, these detailed objectives were rewritten in a more general form together with those related to affective domain:

Cognitive domain: Prospective teachers will be able
- to define the basic concepts related to Development and Learning
- to define the basic principles of Development and Learning
- to explain the basic characteristics of the development process according to development theories
- to explain the basic characteristics and principles of learning theories
- to explain learning process according to different learning theories
- to explain motivation according to different approaches
- to apply development, learning and motivation theories in classroom environment
- to compare and contrast learning theories and approaches

Affective domain: Prospective teachers will
- give attention to activities carried out in the classroom willingly
- be eager to participate and involve in classroom activities
- show his/her reactions to activities willingly
- show his/her opinion on a subject or topic willingly

149

4.2.1.4. Instructional Strategies

At this stage, firstly a teaching model, which is defined as "prescriptive teaching strategies designed to accomplish particular instructional goals (Eggen & Kauchak, 2001, p.16)", was determined. Eggen and Kauchak (2001) introduce social interaction models (the groupwork model, the cooperative-learning model, and the discussion model), inductive models (the inductive model, the concept attainment model, and the integrative model), problem-based learning models (the problem-solving model and the inquiry model) and deductive models (the direct instruction model and the lecture-discussion model). For this course, the Inductive Model was identified as the most appropriate one in accordance with the study purpose because in this model, students are involved in critical thinking skills in order to attain content objectives (Eggen & Kauchak, 2001). That is, critical thinking skills are means leading to intended objectives. According to this model, the instructor provides required information regarding the topic and guides students in constructing their own understanding of the concepts, principles, generalizations, and rules so that a deep understanding of the topics and thinking skills development can be achieved (Eggen & Kauchak, 2001). For these reason, this model was the best match to the study purpose.

In the implementation of the model, there are five phases: lesson introduction, the open-ended phase, the convergent phase, closure and the application phase. In this study, when the lesson plans were prepared, these phases were followed as it is explained below (see Appendix N for Lesson Plan Example).

Lesson Introduction. Instruction of each topic started with an introduction that would prepare students for learning. Students were notified about the objectives and a brief overview of the topic was presented in order to inform them about what would be covered in that unit. Then, tasks that they were expected to master through given examples were given and what they were supposed to do were explained. As examples, case studies, role playing, and articles were used.

The Open-Ended Phase. Eggen and Kauchak (2001) suggest several ways that can be used at this phase. One of them is to present an example and ask students to observe and describe it. Moreover, students might be requested to contrast one related and one unrelated examples or asked to find patterns common in the similar examples. Additionally, a negative example may be presented and the instructor may

ask students to describe it. In all proposed methods, open-ended questions are asked. As for this study, after presenting examples such as case studies, Socratic questioning was especially applied so that meaningful construction of knowledge and understanding of the topic were strived to be ensured (Beyer, 1991; Paul, 1991). Students were asked to find definition of the concepts; to state principles and characteristics within the topic; to describe students' and teachers' behaviors related to physical, cognitive, moral and personality development and behavioral, cognitive and humanistic learning approaches/theories and to compare and contrast the theories and approaches.

The Convergent Phase. Although the convergent phase is given separate from the open-ended phase, there is not a clear transition point between them, because a variety of answers given by students to the open-ended questions converges on a particular answer naturally (Eggen & Kauchak, 2001). Concerning this course, while questioning, wandering from the topic was strived to be prevented. For students who had misconceptions, hints such as examples were provided or further questions such as "what do you mean?" or "why do you think this way?" were asked in order to understand their reasoning and meaning. In this way, they were stimulate to find a particular answer regarding definitions of the concepts, principles or characteristics of development and learning theories, and differences, similarities, strengths and weaknesses of the theories.

Closure. At this phase, definitions, principles, characteristics, differences, similarities, strengths and weaknesses were stated briefly, the relationship among them were formed and the implications of the converged information into learning environment were discussed by students as a result of the preceding phases.

The Application Phase. Finally, in order to apply what was learned, several assignments were given to students. Some were completed in the class with a group work, some were done at home.

While these steps seem to be hierarchical, it does allow flexibility such as replication of some phases within a session. For example, if more than one topic will be covered in a session, then the open-ended, convergent and closure phases can be followed for each topic. This can be more clarified by the lesson plan example in Appendix N that had been prepared for the topic "Cognitive Development". In addition, since in this model, students are supposed to implement critical thinking

151

skills, the lesson plans included Paul et al.'s (1989) critical thinking dimensions as it can be seen from the example plan.

Within this teaching model, active learning strategies were used. In this point, as well as literature, the needed activities/strategies expressed by the students and graduates in the context evaluation were also taken into account. These activities/strategies were those towards developing critical thinking skills, creative thinking skills and problem solving skills; presentation of topics by sts; providing interaction among sts; relating the course with the other pedagogical courses; questioning technique; discussion/debate about topics; observation of persons and learning environment in terms of development and learning theories; discussion of these observations; interviewing with persons from different age groups to understand their personality, moral and social development; discussion of these interviews; case studies; concept map about the topic; research; thinking skills activities; use of various sources; use of worksheets; watching video; and feedback about students' performance.

Before all else, Socratic questioning was the primary strategy throughout all lessons because it is an effective and mostly recommended strategy in promoting critical thinking (Beyer, 1991; Cruickshank et al., 1995; Paul, 1991; Paul et al., 1989; Potts, 1994; Villaverde, 2004). Students were stimulated to think aloud about topics and to explore meanings of concepts, principles and application of the theories by questions such as *why?, how?, in what ways?, what do you mean?* and *could you explain?.*

Moreover, another frequently used strategy was case study. By means of case studies, students have opportunities to analyze situations, events or experiences, to put theory into practice, to determine problems, solutions and alternatives (McDade, 1995; Peterson et al., 1990). Analyzing experiences is suggested for stimulating critical thinking by Paul et al. (1989). In the interview with the pedagogy instructor of the faculty, he also proposed the use of case studies in this course. Thus, for almost all topics, cases related to the topics were given as either in-class activities or homeworks and either written or visual (i.e., video). Case studies carried out in the class were followed by discussion.

Additionally, in order to promote the development of students' thinking skills related to detecting relationship among concepts, principles, characteristics, finding

similarities and differences, and categorizing any given information and to ensure students to be prepared for lesson in advance, they were asked to prepare graphic organizers prior to each lesson. Lim et al. (2003) and Potts (1994) also support the use of this type of concept mapping or classification.

Besides these, other types of thinking skill activities such as compare and contrast, decision-making, and problem solving activities were also included in the course as in-or out-class tasks. There were also educational games such as puzzle; preparation of a poster by using journals, magazines, and articles; and spontenous preparation of concept mapping in order to advance students' understaning of concepts and principles and their interrelationships. All of students' studies in-or out-school were gathered and after being evaluated, they were given back to students with feedbacks on them. Besides, when students were struggling with their taks in groups or individually, the instructor guided them and gave feedback. The instructor tried to inform students about their performance as much as she can because providing feedback is an instructional event influential in the encouragement of learning (Bloom, 1982; Cruickshank et al., 1995; Gagné, 1985).

Besides these, in the context evaluation, the respondents indicated that the classroom participation and interaction among students and with instructor were effective factors in learning. The impact of participation of students on achievement is also emphasized by Bloom (1982). These are of importance in motivating students and creating a warm atmosphere required for the engagement in the given activities (Slavin, 2003). Thus, most of the in-class activities were performed in groups, questioning by the instructor and among students was stimulated and they were let free to talk about their opinions so that participation and interaction were encouraged.

In sum, the instructional activities/strategies that were used in this course were displayed in the following Table 40 with respect to each topic. In general, strategies stimulating active learning and developing the thinking skills were preferred (see also Appendix O for the Examples of Activities Carried Out in the Treatment Groups).

Table 40

Instructional Strategies/Methods/Tasks

Topics	Strategies/Activities
I. DEVELOPMENT	
A. The interrelationship among development, learning and learning environment	Questioning, Discussion
	Task1. Case study analysis: *Memories of Teacher Ayşe*
B. The basic concepts related to development	
C. The basic principles of development	
D. Factor affecting development	
E. Physical and Psychomotor Development	Questioning, Discussion
	Task 1. Presentation of the physical development posters prepared from newspapers or articles,
	Task 2. Article analyze: *Gender Difference: Genetic or Learned?*
F. Cognitive Development	Questioning
	Task 1. Compare and Contrast Activity
G. Moral Development	Role Playing, Questioning, Discussion
	Task 1. Two case studies: Decision Making Activity-*What should Dilare do?* and *What should Can do?*
H. Personality Development	Questioning, Discussion
	Discussion of a book: *Kokoloji*,
	Task 1. Spontaneous Preparation of Presentation
	Task 2. Preparation of a concept map
II. LEARNING	
A. The basic concepts in learning	Questioning
B. Factors affecting learning	
C. Behavioral approach to learning	Questioning, Discussion
1. Classical conditioning	Task 1: Case study (video) analysis,
	Task 2: Case study (a written case) analysis: *Conditioning in a school*
2. Operant conditioning	Questioning, Discussion
	Task 1: Article analysis: Monkey Business, Task 2: Case study (video) analysis, Task 3: Preparation of a puzzle
3. Social Learning theory	Questioning, Discussion
	Task 1: Role Playing, Task 2: Case study (video) analysis
D. Cognitive approach to learning	Questioning, Discussion
1. Gestalt theory	Task 1: Problem Solving Activity, Task 2: Compare and Contrast Activity

Table 40 (*Continued*)

Topics	Strategies/Activities
2. Information Processing theory	Questioning, Discussion Task 1: Retention-coding activities (silent movie, number and video cases, concepts)
3. Constructivist learning theory	Questioning, Discussion Task 1: Case Study: *How does teacher Neriman teaches?*
E. Humanistic approach to learning	Questioning, Discussion, Task 1: Compare and Contrast Activity
F. Motivation	Questioning, Discussion,Task 1: Case Study: *Dan's class*

In addition to these, there were some other requirements of the course:

Article critique. In order to develop students' critical reading skills, they were asked to find an article written about human development and learning and to critique the article based on the article critique criteria given in Appendix P. These questions were prepared according to the elements of reasoning explained by Paul and Elder (2006) and benefited from a syllabus presented in the Foundation for Critical Thinking's web site (Foundation for Critical Thinking, 2000).

Project. This project was a group project leading to students doing research. All group members had to be involved in the project. In order to control this requirement, the instructor came together with the groups each week in the last month before the due date of the project, asked each member about their responsibility and responded their questions. Each group selected a problem regarding education; they were let free to select any problem and asked to investigate, examine and evaluate solutions. The aim of the project was to improve students' problem-solving skills requiring critical thinking and to help them to acquire research skill. An outline and evaluation criteria of the project were given to them at the beginning of the semester (see Appendix Q).

Portfolio. Students compiled all in-and-out class documents such as homeworks, journals, graphic organizers, groupwork exercises, projects, and article critiques in a portfolio. They were informed about preparing portfolio by an information sheet regarding these documents and their objectives (see Appendix R).

4.2.1.5. Instructional Resources

As instructional resources, several materials that were available in the faculty were used. These were given as follows.

Textbooks. Several books were used as sources of information covered in the course.

Handouts of articles, case studies and worksheets and photocopied documents. For in-and-out class activities, generally worksheets were utilized. These worksheets sometimes included an article or a case that were used for an article critique, discussion or a case study. For more difficult topics, additional worksheets were given. Moreover, sometimes, photocopies of various sources related to the topics or the instructor's presentations were also left to students.

Overhead transparencies/ Projector. OVH was rarely used; instead, projector was preferred in topic, sample, case study and video presentations.

Pictures. For some topics (e.g., gestalt theory), pictures were used. Students made comments on them and by questioning, they were stimulated to explore meaning of concepts and principles and characteristics of a given theory.

VCDs. Video was watched in the topics: physical development, classical and operant conditioning, and social learning theory.

4.2.1.6. Developing Evaluation Instruments

In this course, there were many activities and participation of students in these activities was of importance in order to learn topics better, develop thinking skills and, at the end, to attain the objectives. Therefore, attendance to the class was one of the basic requirements of this course. If a student had not attended the classes more than 3 weeks, s/he would have failed the course. As long as students attended the classes, their participation in the activities was evaluated.

There had to be a midterm and a final exam according to the regulations of the Faculty. In addition to these exams, various assessment techniques were also used. According to the context evaluation results, individual and group projects were expressed as preferred assessment techniques in addition to objective test, follow-up test, classroom participation and assignments. Therefore, students' article critique as an individual project and their projects as a group study were assessed. Moreover, their portfolios were also examined in order to take their all studies into account in

their assessment and to assess their progress in learning and thinking skills (Janesick, 2004a). In summary, the assessment procedure of the course was:

The course requirements	Percentage of grade
Classroom participation	7,5 %
Article critique	7,5 %
Follow-up tests	10 %
Portfolio	20 %
Midterm	15 %
Final	40 %

Finally, as a result of this redesign process, the course syllabus was prepared and given in Appendix M.

4.3.   Results on Process Evaluation

Process evaluation in the CIPP model aims to "assess the implementation of plans to guide activities and later to help explain outcomes" (Stufflebeam, 2000, p.279). In light of this aim, the research question that was searched at this stage of the study was "how well is this redesigned course being implemented from the students' points of view?". Underneath this question, two sub-questions were posed: "what are the reactions of students towards the effectiveness of the course implementation?" and "is there a need for revisions regarding the course implementation?".

In order to gather the students' opinions and reactions toward the course progress, student journals were used. Since critical thinking based instruction was implemented in the treatment groups, the students in these groups were asked to fill out journals each week. These journals were tools for reflective evaluation because they covered students' reflections toward their own learning and the instructional activities/strategies/methods. There were 718 student journals prepared by the students in the treatment groups throughout 11 weeks (first, last and midterm weeks were excluded). In this section, finding gathered from these journals were evaluated in two parts. The initial part of this section was left to the students reactions toward

the course implementation and in the second part, the revisions that were made based on the students' reactions were explained.

4.3.1. The Students' Reactions toward the Effectiveness of the Course Implementation

As a result of content analysis, 5 main themes regarding students' reactions and opinions toward the course progress were extracted from 718 student journals. These were "effectiveness of the instruction on learning", "effectiveness of the instruction on thinking skills", "metacognitive skills to learn better", "difficulties/problems", and "instructional suggestions for better instruction" (see Appendix S for Themes and Codes Regarding Student Journals). Findings were discussed under these themes.

4.3.1.1. Effectiveness of the Instruction on Learning

Underneath this theme, several codes appeared because different aspects of critical thinking based instruction had various impacts on learning. These were "thought provoking learning environment", "teaching-learning activities/strategies/methods", and "instructional materials". Moreover, students explained their opinions regarding the effectiveness of specific activities in the course and a different code "specific activities" was created for these opinions. Finally, "negative aspects" code was added for negative reflections of students toward the course instruction. Herein, the flow of findings regarding this theme was presented according to these codes.

When all journals were examined, it was observed that as to the students in general, the topics were clear and understandable on account of learning environment and activities/strategies/methods carried out in this course enriched with critical thinking based instruction. Especially, *thought provoking learning environment* in which students had opportunities to think and to express and share their own opinions and thoughts freely and comfortably was frequently specified as the most effective aspect of critical thinking based instruction. Even, some students' impressions were notable:

> As it happens in general, the activities were effective once again because our course occurs in a very social environment compared to other courses.

> [the topic] was clear and understandable. Because we treat the topic in a way that is different from other courses we have taken till today. We discussed with our friends and teacher. This activated learning.

> No teacher but student-centered instruction!!!…I am very pleased for now. This course is opening the brain!!!....

The results also exposed that as a result of such a learning environment, meaningful learning and understanding were ensured as oppose to rote learning, as indicated by some students:

> In my opinion, education should be conducted in this way. It was amusing; at least there was not memorization…at least, in my university life, I participated only in this course and learned something.

> …today we learned [the topic] in a different style. There is not forgetting because of memorization, which exists in other courses.

> …teaching the course by using such materials [visual materials-video, posers, etc.] rather than based on memorization is making the lesson more retained.

Overall, the analyses of the journals revealed that positive impacts of the instruction on learning were stemmed from learning by thinking instead of direct learning from the instructor. In other words, it was stated that students could use their own wording instead of the instructor's. Indeed, their explanations addressed that discovery learning, which is an important component of constructivist approach to learning (Slavin, 2003), appeared in the course. In discovery learning, required information and experiences are provided for students so as to encourage their active involvement and to facilitate discovering and constructing meaning of principles and concepts by themselves (Eggen & Kauchak, 1997; Slavin, 2003), as exemplified in the following verbatim expressions:

> To tell the truth, today's topic (basic concepts) opened my brain. I thought that we did what we have needed to do for a long time. Firstly, we demonstrated our reasoning by discovering it. Understandability of topics depends on how much we understand and I comprehend the topic and the story (given case study) well. Right now I feel that I renew my knowledge and contribute something to me.

> The topic was clear and understandable because we came into prominence. Our thoughts were exposed and then positive and negative aspects of these thoughts were determined.

> [the topic] was clear and understandable. The instructor primarily strived to explain the topic by our interpretations.

…our opinions [about moral development] were initially asked and our opinions were compared with the studies of the experts. These made us to learn effectively.

As an example, the students' impressions toward teaching of Gestalt theory in which students determined the perception principle over the figures and discovered the principles by questioning can be presented.

> I think that the topic [Gestalt] was clear and understandable because introducing the concepts and laws (pragnanz) by using schematic drawing was beneficial in understanding the topic…because I could make different comments by understanding the schemas and questions.

> …explaining the laws via figures on the cardboards and doing this in groups were effective in learning the topic.

These expressions support what Bruner, who is an advocator of discovery learning, says, "we teach a subject not to produce little living libraries on that subject, but rather to get a student think….for himself, to consider matters as an historians does, to take part in the process of knowledge-getting. Knowing is a process, not a product" (as cited in Slavin, 2003, p. 261).

Next, considering and perceiving topics from different perspectives were the other reasons for effective learning specified by the students:

> ... putting forward different views by our friends having different culture made us to understand the topic better.

> Since as a result of the atmosphere created in the class, various points related to the topic were expressed by more than one person, the topic sticks in our minds more easily.

In addition, it was often indicated that making comparisons between views and theories helped them to understand better, especially in learning cognitive, moral and personality development theories and behaviorist theories and constructivist approach.

> [the activity] was effective because it was asking the similarities and differences between the two views. At the same time, it was asking us to make comments.

> [the activities] were effective because the comparison and critique made me to learn better. Participation of all of us in the class was ensured by asking our opinions.

> …comparing and critiquing the views of Piaget and Kohlberg regarding moral development was good. I love this.

160

At the beginning, I could not understand the topic [operant conditioning], but then as I learned differences between topics [operant and classical conditioning], understanding the topic got easy.

…relating and comparing the topic [constructivism] with the previous topics [other cognitive theories-gestalt, information processing theory] were effective in my understanding.

Besides these, the responses highlighted that the course instruction aroused motivation and active participation and attracted attention by creating an enjoyable and convenient learning environment; and thus, it fostered better learning and retention.

I know that I have the [thinking] skill but [the lesson] provided self-confidence and motivated me to show myself to my friends and the instructor.

…passiveness is not possible in such an active lesson environment. Due to the in-class activities, retention [of the topics] is rising much more

Even a sleepy student like I could understand the topic….because the number of students in the class is less and participation of all students was provided.

The reasons of being understandable and clear were the encouragement of active participation and the increase in the interest to the topic owing to interesting case studies.

…In fact, this is a confession: I was thinking that this course was easy. That is, at least I was guessing. But I was mistaken. And it became a course that I love the most and I am not strained to wake up morning [to come to the lesson]. Thanks….

All these results supported the claim that the infusion approach in which thinking skills are integrated into subject matter and tasks or activities are prepared accordingly affect subject learning positively (Raths et al., 1967; Zohar & Dori, 2003; Johnson, 2000; Beyer, 1988a).

In this sense, *in-class activities and teaching methods/strategies* are tools for providing opportunities to use thinking skills. Therefore, throughout the semester, a variety of critical thinking based activities and methods were used in the course. According to their expressions, of them, questioning, group works, case studies and discussion were very influential in learning the topics.

The questioning was the main instructional technique that was applied in all lessons not only between the instructor and students but also among students. As a matter of fact, questioning, especially Socratic questioning, is strongly proposed for dialogical instruction for stimulating thinking and mastering the content as opposed

to didactic instruction (Paul, 1991). Supportively, it was found out that this technique encouraged students to examine and learn topics by questioning and reasoning:

> The instruction of the lesson by questioning provided me to use my thinking and interpretation skills and this was effective in my learning the lesson.

> …asking questions about the related events and finding out answers to them were important factors in understanding the topic.

Moreover, it was often stated that owing to this technique, they participated in the class and paid attention much more and they listened carefully because of the interesting and different comments and the fear of being next student to speak. They also expressed that since they listened carefully and participated to answer, they did not forget responses, especially their own ones.

In group works, cooperation within groups was strived to be ensured by monitoring each groups' members continuously while working on the given tasks and by keeping the number of members no higher than four. Regarding group works in the activities, they indicated that they could exchange of their own views so that they could realize what they had not think or what they had thought in a wrong way. Another expressed benefit was the contribution of each student to their friends' opinions. It was revealed that on account of having opportunities to yield various comments and views regarding a topic, they could learn better through group works.

> We witnessed the contribution of group work to the rise of the efficiency.

> The activities were good. Reading, discussing and reaching a common decision in groups… Next, listening to the other groups' ideas and finally, the summarization by the instructor…

> …explaining the topic in groups yielded different comments and this was effective in my learning.

> …the group work nailed the knowledge into our minds.

Because of these benefits, cognitivist learning theories such as constructivism and information processing theory advocate such cooperative group works ensuring interaction (Beck & Kosnik, 2006; Woolfolk, 2004).

Furthermore, the results showed that case studies were also effective activities in learning. Additionally, it was mentioned that analyzing case studies in the instruction of a topic or concept rather than just lecturing had facilitated understanding and interpretation of topics or concepts. In this regard, it was indicated that inferences from cases was quite effective. It was also noticed that some students

could understand how theories occur in real life and transfer theories into different cases or their own life.

> …in terms of reinforcing the topic, we learned how it [moral development] occurs in different situations.
>
> ..by the cases and dilemmas, I could absorb the topic [moral development] more quickly and in a better way….Moreover, the 'What should Burcu do?' [a case study] activity caused us to determine our own moral development level. I found it interesting. I have never thought such a thing before.

Because of the abovementioned benefits, McDade (1995) states that case studies stimulate active involvement of students in their own learning and critical thinking.

Furthermore, the students pointed out that they understood topics better through discussion of topics or cases in groups or in class because discussion render possible to consider a subject from different points of view, to reach a conclusion appropriately by various comments, to put theory into practice, to repeat topics, and to attract their attention.

> …besides the explanation of the definition and characteristics of the term 'moral' by cases, reciprocal discussions of the studies carried out by the persons who are experts in this field and of their views caused clarity of the topic.
>
> …having a discussion environment regarding the topic and putting the topic into practice by releasing it from theoretical level were effective [in learning].
>
> …discussing the cognitive development periods in groups created a difference in the lesson. It attracted my attention. At the same time, it made me to repeat.

These results support the claim that discussion facilitates learning in terms of both cognitive and affective domain (Weston & Cranton, 1986).

Concerning the graphic organizer, some students touched upon its impact on the preliminary study and, so, on learning the topic.

> ..the preliminary study [graphic organizers] that we have done prior to the introduction of the topics provided us to concentrate on the topic better.
>
> Each week, we make graphic organizers related to that topic and come to class by reading that topic. These are enough to understand the topic.
>
> …I came to the class as being prepared. I found an opportunity to understand the topic better by preparing the graphic organizer.

In addition to activities/methods/strategies, the students made reflections on instructional materials, especially visual materials, used in the course. For instance,

163

in the second week, there was a video showing prenatal period and then the students presented posters that they prepared in groups regarding physical development from prenatal to adolescent periods.

> …since we watched a video showing the application of the topic and we reinforced the topic with the presented pictures [posters]…I really learned the topic.
>
> I realized that a person's learning by seeing is always more effective. Bearing the figures in our minds eased the understanding of the topic.

Likewise, when classical and operant conditioning topics were taught, both video and slide show were displayed. They all agreed that these visual materials were very beneficial for learning and retention because by means of these materials, they could watch a real life scene of theories, repeat topics and bear visual representation of topics in their minds.

Besides these, the students stated their reflections toward specific activities that were carried out in the course. In the 4th week (moral development), a spontaneous role playing was performed by a group of students. They were asked to pretend as if they were a group of students taking an exam and one of them, who had to work the previous night and so could not study the exam, was cheating. Regarding this activity;

> …the drama that was performed provided us to have an introductory knowledge regarding the topic…
>
> By the drama and cases, the topic was extremely understandable and enjoyable.

Moreover, related to the personality development topics taught in the 5th week, the students prepared and presented the topics spontaneously in groups in the class. This activity was perceived very beneficial in learning the topic:

> Before the explanation of the topic by the instructor, our presentation of the topic by understanding it and our study in groups were effective.
>
> We made a presentation by summarizing the topic. This provided the retention of the topic much more.

In the same week, there was a competition, as well. Small papers on which the concepts related to development theories were written were given to the students. They were requested to prepare a concept map in which the concepts were related each other accurately. They expressed;

164

…I found an opportunity to repeat the topics and even learn better via these small papers.

…the competition that we have done… rendered understandability.

In the activity (competition) that we have done lastly, we understood the topics, which we have seen until today, better.

Moreover, when social learning theory was taught, a small folklore show was done and asked some students to perform the figures in it; then by questioning and discussion, they explored learning principles of the theory. Some students stated:

Decorating the lesson with a small folklore show and teaching by observing were effective in learning the topic.

Dancing the halay by our friends and teaching the lesson based on this were very creative. We had a chance to do observation.

In the week when the information processing theory was taught, a silent movie was played in the introduction of the topic. The selected students strived to explain the concepts related to the previous learning theories by the silent movie play. Then, the students were asked what they remember concerning this activity. In addition to this, an activity about recalling words was also done. Through these activities, memories and cognitive processes in the information processing were explained. The students expressed:

Due to silent movie and recalling activity, we paid our attention to the lesson.

Playing silent movie and bearing information in mind in a short time and then writing it caused the topic to be clear and understood.

The topic was clear and understandable. Because we could explain the topic by our own thoughts

Finally, while for most of the students, learning environment, activities, methods, and instructional materials were effective in understanding and learning topics, a small number of the students indicated that they could understand the topics well not because of the course instruction but because of that they already encountered or experienced these issues in their real life and had a preliminary knowledge at basic level. On the other hand, a few students explained several negative aspects regarding the effectiveness of the course implementation. As for them, topics were not clear and activities were not effective in the first weeks:

> …the reason of not being understandable entirely was that everybody said something and I could not comprehend the integrity of the topic while questioning whether their opinions are right or wrong.

> …the activities were not effective, since I am not interested in studying on the concepts and I could not pay attention because of not overcoming the thought that I can learn when the exam date is soon.

This number was slightly increased in the next weeks as various views and concepts to which they were not familiar were covered. Especially, concerning the operant conditioning, almost half of the students indicated that the topic was complicated and although the activities and examples helped them to understand, they had a question in their mind regarding its difference from the classical conditioning.

4.3.1.2 . Effectiveness of the Instruction on Thinking Skills

The results pointed out that the activities and methods were effective not only in learning but also in promoting the students' critical thinking skills including basic thinking skills. Actually it was already presumed that such a learning environment would stimulate their thinking. In this sense, the analyses of the journals revealed in what ways and how it occurred. For this reason, the question, "Could I use my thinking skill in the activities today? (If yes) How?", in the journal was a leading question. Yet, when the responses were scrutinized it was noticed that while almost all of the students agreed that they used their thinking skills in the lesson, some did not mention how it appeared. Thus, responses of the students who explained the way of using thinking skills were discussed herein. These responses exposed that activities, teaching methods and materials in the course were main tools for stimulating thinking skills. Therefore, in content analysis, "questioning", "case studies", "the given examples", "discussion in group works", "comparison activities", and "visual materials" were emerged as codes underlying this theme. Findings regarding these codes were explained below, respectively.

It was revealed that questioning encouraged students to generate their own ideas and to explore definitions, principles and implications of theories by themselves (S-1, S-14) [1].

> Before the explanation of concepts and definitions, asking our opinions directed us to thinking.

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[1] These are strategies promoting critical thinking (see Table 2).

by asking questions such as 'in your opinion, what can it be?' without explaining the topic made us to use our thinking skills.

…while defining concepts and saying what they are, I used my thinking skill.

…in order to increase examples within the topic and in terms of interpreting the concepts, I could use my thinking skills.

It was also noticed that while questioning technique stimulated them to think, thinking process caused them to explore and reason their own perspectives regarding topics. In this regard, it is asserted that encouraging a person to reason his/her own thinking develops confidence in reason (S-9), which is an affective critical thinking skill requiring logical thinking, reasonable and persuasive points of view and conclusions (Paul et al., 1989; Paul & Elder, 2006). Therefore, the responses might imply that the 'confidence in reason' skill was also fostered:

Giving every student a chance to speak stimulated their thinking. Especially explanation with reasons was effective.

Beforehand, instructors were explaining and I was listening. As for now, in order to say something I think about what I think.

I could expose my own ideas and explain why I thought this way.

In addition, it was recognized that reasoning themselves facilitated the development of another critical thinking skill; intellectual humility (S-5), which shortly means being aware of limitations of his/her own views and knowledge and not being afraid of saying "I do not know" (Paul et al. 1989; Paul & Elder, 2006), as stated in the following expressions:

Due to the questions, I tried to find answers to them. I questioned my friends' responses. I specified my fallacies that I believe and we discussed.

…questions that the instructor directed to the class stimulated us to think how much knowledge we have about the topic and disclosed our knowledge.

…both questions that the instructor asked and different responses given by our friends increased my thinking and interpretation skills and made me to think different than before.

I realized that I made a mistake in defining some concepts in my mind.

Moreover, the results displayed that *case studies* were conducive to developing thinking skills because by means of these tasks, students related topics to the cases, put themselves into the place of the persons or the situation in the cases, analyzed and reasoned the persons or situation deeply (S-20):

> I tried to relate the behaviors in the video to the theory and methods that I learned [operant conditioning].

> In order to understand to which schedule of reinforcement the behaviors in the classroom environment [in the video] are related, I used my thinking skill.

> …the activities provided me to make comments through questions requiring us thinking of whether the behavior of the person in the case was right or wrong or what she/he should do.

> Since I evaluated whether Can was guilty or not and his sister's attitudes [a case study regarding moral development], I believe that I could use my thinking skill.

It was also disclosed that case studies aided students to find solutions (S-19);

> I thought what I can do in front of the events, how I can find solutions.

> …I thought what I would do if I would encounter such an incidence. I compared my solution with others' behaviors.

> We examined a case and in that case, we sought answers to "what can we do?" and found out responses by using more than one choice.

and to develop their own perspectives (S-12):

> ….we needed to think deeply in order to find different approaches.

> I tried to approach the topic from different perspectives.

Furthermore, students stated that in case studies, they could explore implications and consequences (S-35) and make inferences by considering their own observations (S-32):

> I could put myself into the place of the persons in the cases. I thought what would I do? what kinds of consequences do my actions cause, in terms of my life and society? (S-20, S-35)

> Due to the activity, I thought what happens if the case [given in the activity] occurs or if not… (S-35)

> Realizing that conditioning has happened to me many times and observing its impact on me caused me to think what I can do in these cases.(S-32)

> Today, I used [thinking skills] extremely. I thought both my own life and behaviors of people around me. I made some inferences(S-32).

> I strived to understand and comprehend how this situation [social learning] occurs in life and to make an intellectual comment(S-32).

In this regard, it was noticed that cases encouraged students to make implications toward teaching (S-35):

> Since we will become teachers, I thought how we can behave them [students] (in negative behaviors).

I thought how I can create an environment in the future.

I thought what I can do when I become a teacher.

I thought how I can interact with students if I would become a teacher.

Besides these, a student's response revealed that case studies were beneficial in the development of intellectual faith or integrity (S-7); this is also another affective critical thinking skill and one of its characteristics is to honestly admit inconsistencies in their own thought:

The thoughts that I say in general showed difference with the decisions that I made in front of the cases.

The results elicited that as well as case studies, the given examples leaded students to relate the topics to their observations and real life (S-27):

Since the given examples are actually incidences that all of us have been experiencing and that have been occurring around us, we relate these examples to our experiences.

We found an opportunity to compare the given examples with those in real life.

I thought about how classroom environment in my elementary and secondary school years was and about my teachers' attitudes and made comments on them.

As for a few students, another contribution of examples was that they could question these examples cases in terms of accuracy (S-17):

I made comparisons by thinking the accuracy of the examples.

…when the instructor shows and does something, I examine them deeply. I start to discuss inwardly whether these are wrong or not.

It was also detected that *discussions in group works*, which were especially applied in case studies, stimulated them to realize and compare different perspectives and their own thoughts through dialogs among students (S-24).

In the activities conducted by group works, we could exchange our ideas and so they caused us to yield various ideas.

I shared my opinion with my friends. I learned their ideas. We reached a common decision together.

In comparing [the groups' opinions], I needed to think about differences and make comments on them.

The group work was important because effective thinking along with the group came into prominence.

169

The abovementioned expressions address that they had listened to their peers' responses, realized differences in the views and compared and evaluated these perspectives. This means that discussion in group works made them to listen to their peers critically (S-22). These results displayed that group work and discussion stimulates dialogs among students and, thus, classroom interaction so as to invite, maintain and foster students' thinking (Paul, 1991; Costa, 1991c).

It was also noticed that *comparison activities* on theories reached its purpose because these activities helped students to detect similarities and differences (S-29):

> While distinguishing operant and classical conditioning from each other I could use my thinking skill.
>
> …it was good to see the differences by repeating the old topics and to realize our deficiencies.
>
> We reinforced the topic [constructivism] by exposing its different and similar aspects with the other topics.
>
> I thought the similarities and differences between behaviorist and cognitivist approaches by writing them….

In this regard, peculiar to the comparison activity of Piaget' and Vygotsky' views, it was expressed that this activity had stimulated some students to make plausible comments (S-32) and to note significant differences (S-29):

> …in the activity, we were being asked to write our comments. Therefore, I tried to find a right one for me according to these two views. And I tried to make an interpretation.
>
> I interpreted by thinking the differences between Piaget and Vygotsky.

Another comparison activity was carried out over an article entitled "Sex Differences: Learned or Genetic?". As an in-class activity, the students evaluated this text and compared two different views. As to some students' expressions, this analysis was effective on developing confidence in reason (S-9) and their own perspective (S-12):

> I read a text in which there are different views. In the text, the views were strived to be proved. After the different two views, I reasoned out whether there was a change in my opinions before and after reading.
>
> Reading the text individually and making interpretations was effective in my thinking .

In addition to these methods and activities, some students referred to the benefits of *visual materials* while explaining how they used thinking skills. For instance, the visual presentations via video and posters regarding physical development caused them to compare what they have seen on these video and posters with what they have observed in their life (S-27):

> …we compared [the physical development periods] with the development of children whom we see around.

> Yes [I used my thinking skill] by relating with the incidences around me.

> While my friends explained the topic over the poster, I imagined a model of human being in my mind. I strived to overlap the child [in his mind]'s development periods with those in the activity [poster]

Some responses displayed that not only observing or listening what have done in the posters but also preparing their own one were also effective in their individual and independent thinking (S-1):

> I could use my thinking skill in the matter of how we can reflect the topic accurately.

> …the activity [poster] was effective in exposing our individual skills.

> After we found the required information for the activity, the idea as to how we can transfer it was formed and I used the way of transferring the idea to the poster in a best way.

In conclusion, it can be inferred from the students' responses on the journals that activities, teaching methods and materials used in Development and Learning course stimulated critical thinking in a variety of ways.

4.3.1.3. Metacognitive Strategies to Learn Better

The results gathered from the journals showed that the students gave various responses as to what they can do for their own learning. A variety of responses indicated that they seriously take care of their learning. Actually, their reflections on their learning were of importance for metacognition that is defined as the awareness of one's own learning (Slavin, 2003; McCown & Roop, 1992) and for self-regulation, which is the use of metacognitive abilities consciously in order to improve thinking and learning (Eggen & Kauchak, 2001).

The responses highlighted that the students were aware of how to learn since they disclosed various strategies. However, it was realized that these responses

addressed only their intention because only a few students mentioned that they use learning strategies such as discussing, using different sources and participating into lessons:

> When there are topics in which I have a difficulty, the methods that I use to be successful are to discuss, to use different sources and to prepare visual presentations are.

> Being active in the lessons, participating and making comments provide me to be connected to the lesson and the topic.

Likewise, any evidence as regards *self-regulation* could not be gathered. A student explained strategies that a self-regulated learner possesses but did not specify whether she applied them or not:

> …[I should] come to class as being prepared and motivate myself…then, I need to observe my situation in the lesson and correct my mistakes.

Concerning the intended strategies, students mostly indicated the necessity of regular and planned study before and after the lesson in order to be active mentally in lessons and not to have difficulty in learning. Moreover, they specified that they needed to read more and search sources. In this respect, the use of intellectual skills while reading and studying was also explained.

> I need to learn by reading more. At least, I need to learn what was done previously and put them into practice.

> In order to be successful, I can develop myself by reading more cases and making comments on them.

> I should read, search and be full of curiosity. I should know how to know the knowledge.

> I should be a person who read continuously by searching and thinking.

> I should analyze the topics by studying scientifically and examine in detail by forming cause and effect relationship.

Discussing or talking about the topics was also mentioned as a learning strategy:

> Discussing the examples with my friends might be helpful.

> Talking about something related to the topic with persons around me before coming to class.

> We can continue to exchange our ideas by coming together with my group's members.

Furthermore, after the information processing theory was taught, some students expressed that they could use the *coding techniques* explained in the lesson.

I explored that my short term memory is quite narrow. I easily forget and remember hardly….I can extend the short term memory. I can do exercises. Coding is a good choice.

In addition to these, *repeating the topic or the in-class activities; observing development of different age groups; transferring the topics/concepts into real life; watching movies and photos; taking notes; participating into the class actively; listening carefully; and overcoming excitement* were pointed out in order to enhance learning.

Besides these strategies, it is noteworthy that a few students critiqued their own rote learning:

I should give up memorization and learn by understanding.

I need to read, to benefit from different sources, to have thinking skills, to understand, not to be a person who learns by rote.

In sum, even though the responses did not disclose any evidence proving the use of the expressed learning strategies, they pointed out the awareness of students about their own learning. Therefore, it might be deduced that student journals might have ensured this consciousness in consequence of forcing students to think about their own learning and thinking.

4.3.1.4. Difficulties/Problems

The students were asked to determine what difficulties they had experienced. Their expressions unveiled difficulties in participating, expressing their opinions, understanding abstract topics, determining similarities and differences, establishing relationships among topics, being adapted to groups, and being loaded with assignments and overloaded with hard courses in the same semester.

Since students were stimulated to speak throughout all lessons, some students responded that they were reluctant and excited and thus had difficulty in *participation*.

Not being able to express their own thoughts properly was another problem stated by some students:

I had a difficulty in express what I think.

I could not define the concept that I already know.

I could not form sharp sentences in defining the concepts.
…I could not transfer what I know exactly.

However, one student indicated that they experienced the problem but could solve it during the lesson:

…we realized deficiencies in the expressions and overcame it.

In relation to understanding of the topics, it was indicated that they had difficulties in *constructing meanings of abstract concepts* regarding particularly cognitive development and classical and operant conditioning because of not being familiar with them.

Moreover, it was noted that *in determining the differences and similarities* among the learning theories and approaches, some students had problems. The results revealed that a few students strained in comparing the Piaget' and Vygotsky's views and most of them experienced difficulty in distinguishing operant conditioning from classical conditioning. Whereas most of the students expressed that they did not have any difficulty in understanding these topics.

In this regard, a factor obstructing comparisons among theories and approaches was arisen from having difficulty in *establishing relations among topics*. Regarding the compare and contrast activity carried out at the end of the constructivism topic, some students indicated that they could not recall the previous topics and thus, could not relate constructivism to the other cognitivist theories or relate the cognitivist approach to the behaviorist approach, even though they mentioned that this activity helped them to understand the constructivism topic and the relationship among the theories.

Besides these, group work related problems such as not *being adapted to the groups* were frequently specified. They did not want to be in a group that was formed by the instructor because they think that they would not understand each other in such groups. They preferred choosing their own group members by themselves.

In addition to these they expressed their concerns and complaints regarding *the load of assignments*.

174

> Such dialogs and activities are good. But please do not force us much…My room is full of your documents… But still I am pleased from the course and the classroom environment.

> We stay awake all night because of having too many assignments. Fewer assignments can be given.

> The assignments took too much time. Because of the activities and assignments, I could not study my subject courses. I come to the subject course as being unprepared.

> …we could not find an opportunity for the other important courses because of leaving time to this course. The activities should be lessened, the assignments should be lessened.

In this sense, some emphasized that they were *taking hard courses at the same time* with this course and; thus, they were overloaded and could not focus on neither this course exactly nor other courses.

> This year, the importance of lots of our courses are serious, therefore, this situation has been causing a stress. We have a fear of not fulfilling what we are asked properly. There might be tolerance in some issues. The course might be lightened….this is not because of avoiding studying. We really cannot concentrate on [the course] exactly. Especially, me….

> The activities are too many that I could not find time to study the other courses!...

Of these difficulties/problems, groups work and assignments problems were expressed by the majority. Thus, these problems became the primary concern of the course implementation that should be overcome. On the other hand, the other problems were also strived to be handled in a variety of ways such as using attractive activities to ensure engagement of all students and handing out photocopies including examples for concretizing abstract concepts.

4.3.1.5. Instructional Suggestions for Better Instruction

In addition to the students' evaluations toward the effectiveness of the course on learning and thinking skills and their reflections on their learning, they proposed many valuable suggestions for better instruction. While the results so far were taken into account in determining to what extent the course was implemented as it was intended, the suggestions were of importance in improving the course and overcoming difficulties stated previously.

At the first weeks, a few students recommended the *repetition* of the previous week at the beginning and of that week at the end of the lesson. Next, concerning problems encountered in groups works, students wanted to continue *group works* but with group that they selected by taking into account the harmony of group members. As an example of group work, some suggested g*roup presentation,* which is the preparation and presentation of any topic or assignment in groups:

> Presentation of the topics would provide him/her to be prepared much more. Also, asking the other students about their opinions regarding topic might be more effective.
>
> …for example, a group can present by using different materials and the other one by animating.
>
> …a topic can be assigned to more than one group and then discussed among groups by brainstorming

Regarding *questioning*, a student proposed that the instructor might ask questions to students selected randomly from the list in order to ensure all students to be prepared for the class and to be motivated. Also, another student suggested that sometimes they can ask questions to each other.

While some students expressed that there might be *a variety of activities* such as puzzles, drama, debate, or more discussion, they touched on the inadequacy of the time for interpretations and opinions and for exchanging their ideas with their groups.

Besides these, *giving assignments and projects*, *providing more participation, and administering a follow-up test at the end of each week rather than at the end of the related topics and a variety of visual materials* (*photos, pictures, slides, CDs, tv, projector, posters, & etc.)* were the other suggestions.

Aside from these suggestions that were generally proposed at the beginning of the semester, the students were mostly satisfied with the course progress and indicated no need to do anything else.

4.3.2. Revisions regarding the course implementation

The main purpose of the process evaluation was to evaluate the course implementation and make revisions at the proper time if needed. In this sense, students' responses on the journals regarding difficulties/problems and suggestions

illuminated decisions that should be made appropriately to revise the course so as to overcome problems and take suggestions into consideration.

In the first weeks' student journals, students requested the repetition of each topic, more activities, assignments including projects, and visual materials. Yet, at that time, they did not know the activities or assignments that they would encounter during the course. Actually, some of their suggestions had already been taken into account in the redesign of the course and they were implemented in the next weeks.

For example, there was a recall of the previous week and, at the end of a topic or unit, there were tasks or assignments providing the repetition of the lesson. Also, each week, a different activity was carried out and assignments were given as reflected by a student:

> …we use a different activity each week and these are activities that I cannot even think. That is, everything is going well…

Moreover, carrying out a project by each group was a requirement of the course. Regarding visual materials, a variety of materials such as video, pictures and power-point presentations were used. Even as a task, the students were asked to prepare a poster regarding the physical development topic in groups. In addition, in the 2nd week, a video was watched; it was observed and reflected that students were very satisfied and they wanted such a presentation in the subsequent weeks as well. Besides these, there were also group presentations as it was requested in the journals such as poster presentations, topic presentations, project presentations, and presentations of the in-class activities. However, time limitation was the main problem in the realization of their requests and suggestions. For instance, the follow-up tests could not be given at the end of each week but given at the end of the related topics.

On the other hand, some modifications were also done according to the results. Initially, students' expressions on journals or in class displayed that there were problems in groups. These groups had been formed according to the achievement level (CGPA scores) of the students by the instructor at the beginning of the semester. Yet, in the first week, some complaints regarding this formation were expressed. The instructor also observed that the students who did not like group members could not concentrate on the activities and could not be motivated. Group works were of importance because students had to do some of the activities, tasks,

assignments and project in groups. If they continued to have negative feelings and attitudes toward their group, they would not perform well on the given tasks or activities and this would affect their progress and course progress negatively. In this sense, Beck and Kosnik (2006), who explains social dimension of students as a requirement of teaching for understanding in terms of constructivist point of view, claim "collaborative learning is dependent on community: unless students know each other and get on well, their work together will be half-hearted, and they will lack the level of trust needed to share their views and take risks in developing new ideas" (p. 23). With the assumption that this is true not only in community per se but also within groups in this community, the instructor decided to let students free to select their own groups although there are opposite views in literature.

Secondly, in order to support their learning, hand-outs from different sources were given to students. In addition, puzzles had been suggested; thereupon, they were asked to prepare a puzzle using the concepts related to the classical conditioning rather than to solve a puzzle. An activity in which key concepts of a topic are written on cards and these cards are pulled and explained by students was also proposed by a student in the 8th week (operant conditioning). This activity was carried out in the 11th week (information processing theory).

Furthermore, in the last weeks, the students started to complain about the assignments by writing in the journals and expressing in the class verbally.

> The assignment started to be too much. But I felt glad when I heard that we would not do anymore assignment.

Since they were supposed to carry out a project as well, anymore out-class assignment was not given at the same time in order not to decrease their motivation and provide more emphasize on the project.

Briefly, students' suggestions were strived to be taken into account throughout the course. Some of them had been already handled while redesigning the course; some of them such as letting students free to form their own groups, not giving homework assignment at the end of semester, giving hand-outs, and carrying out a few suggested activities were realized after being proposed by students.

4.4. Results on Product Evaluation

Stufflebeam (2000) explains; "product evaluations identify intended and unintended outcomes both to help keep the process on track and determine effectiveness" (p.279). In direction with this definition, the impact of critical thinking based instruction on the students' learning and critical thinking were examined by comparing the treatment and control groups. Data was gathered by the achievement test administered as the pretest, posttest and retention test, the CCTDI conducted as pretest and posttest, and the focus group interviews carried out at the end of semester. The quantitative data obtained from the tests was analyzed by using Mixed Factorial ANOVA and Mixed Factorial ANCOVA and statistical test results were presented under the corresponding research questions together with their assumption tests. These were followed by the interview results for which content analysis was used.

4.8. Is There a Significant Time Difference among the Students' Mean Scores on the Pre, Post Achievement Tests and Retention Test After Controlling Their Cumulative Grade Point Average (CGPA)?

For the purpose of testing the time effect on the students' progress in learning from pretest to posttest and from posttest to retention test when controlling CGPA, A 2(groups) X 3 (time) Mixed Factorial ANCOVA was used. Testing time effect means testing whether there are within subject differences as to the time of testing (pretest, posttest, and retention test times). The purpose of controlling CGPA was to hinder the impact of inequivalence among the students on the results. In other words, CGPA scores of the students were used as the covariate in the analysis in order to adjust the achievement tests score means as to what it would be if these groups had been equal in terms of CGPA.

Before testing the assumptions of Mixed Factorial ANCOVA, the descriptive statistics in relation to the pre-post achievement tests and retention test scores that entered the analysis are presented in Table 41.

Table 41

Means and Standard Deviations of Pre-Post Achievement Tests and Retention Test Scores

Time	Groups	*M*	*SD*	*N*
Pretest	Treatment	13.04	3.294	55
	Control	13.86	2.828	65
	Total	13.48	3.065	120
Posttest	Treatment	21.49	4.392	55
	Control	22.28	4.794	65
	Total	21.92	4.612	120
Retention Test	Treatment	17.64	3.846	55
	Control	17.52	4.409	65
	Total	17.57	4.144	120

Next, the normality of variables was checked. For this purpose, Kolmogorov-Smirnov normality test was used. K-S test results given in Table 42 indicated that variables were normally distributed for both the treatment and control groups because none of the test results were statistically significant.

Table 42

Kolmogorov-Smirnov Normality Tests Results for Pretest, Posttest, Retention Test and CGPA Variables

Groups	Pretest		Posttest		Retention test		CGPA	
	K-S test	*p*	*K-S test*	*p*	*K-S test*	*p*	*K-S test*	*p*
Treatment groups	.943	.336	.721	.676	.695	.719	.862	.447
Control groups	.959	.316	.805	.536	1.039	.231	.641	.805

Upon meeting the normality assumption, the assumption of sphericity, which is specific to Mixed Factorial ANOVA/ANCOVA was tested. The assumption of sphericity is similar to the assumption of homogeneity in Between Group ANOVA but it is related to the equality of variances of the differences between treatment conditions (Field, 2005). In other words, since in this study the achievement test was administered to the students three times as pretest, posttest, and retention test, there were three treatment conditions. Thus, in order to assume the sphericity, the differences between each pair of test scores (i.e., between pretest and posttest scores

or between posttest and retention test) should have equal variances. The Mauchly's test is used to test this assumption. Unfortunately, according to the results presented in Table 43 the assumption was violated because the null hypothesis that the variances of the differences between conditions are equal was rejected with an alpha level of .05.

Table 43

Mauchly's Test of the Assumption of Sphericity

Within Subjects Effect	Mauchly's W	Approx. χ^2	df	p
Time	.921	9.549	2	.008

In case that the assumption of sphericity is violated, Greenhouse & Geisser or Huynh & Feldt corrections for *F*-ratio, produced by SPSS, are suggested in testing the within-subject effects. In these adjustments, the *F*-ratios remain the same but the degrees of freedom and so the critical values against which the obtained *F*-statistic is compared change because the degrees of freedom are corrected by multiplying with the corrections (Field, 2005). In this study, Greenhouse & Geisser correction, which was .927, was used because of being more conservative. The Greenhouse & Geisser corrected F-statistics for the main effect of testing time and the interaction effect between time and covariate CGPA are shown in Table 44. The results implied that mean scores of the students in both the treatment and control groups demonstrated significant differences as to the testing time (pretest, posttest, and retention test), $F(1.854, 216.863) = 7.931$, $p = .001$. The effect size was .063, which is at medium level as to the Cohen's criteria[2] (as cited in Steven, 1996). Next, the within-subject contrast tests revealed that the mean scores of the students significantly changed from pretest to posttest ($F[1, 117] = 3.936$, $p = .050$) and posttest to retention test ($F[1, 117] = 4.103$, $p = .045$) but with small effect sizes (.033 and .034, respectively). These results implied that the students' achievement mean scores in both groups significantly increased from pretest ($M^3 = 13.455$) to posttest ($M = 21.916$) but a

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[2] $\eta^2 = .01$ as small, $\eta^2 = .06$ as medium, and $\eta^2 = .14$ as a large effect size

[3] Estimated marginal means of the students' scores on each test.

significant loss of knowledge from posttest (M = 21.916) to retention test (M = 17.612) was observed.

Table 44

Mixed Factorial ANCOVA Results for the Main Effect of Time and the Interaction Effect between Time and CGPA on the Students' Achievement

Source	df	SS	MS	F	p	Partial η^2
			Tests of Within-Subjects Effects			
Time	1.854	138.576	74.763	7.931	.001	.063
Time X CGPA	1.854	358.356	193.338	20.509	.000	.149
Error	216.863	2044.335	9.427			

Moreover, the interaction effect of time and the covariate CGPA showed that mean scores of the students were significantly different as to the testing time when controlling their CGPA scores, $F(1.854, 216.863)$ = 20.509, p = .000, with a large effect size (*Partial η^2* = .149). However, contrast test results pointed out that there was only significant difference between pretest and posttest mean scores ($F[1, 117]$ = 24.182, p = .000, *Partial η^2* = .171) but not between posttest and retention test mean scores ($F[1, 117]$ = .020, p = .887) when CGPA was controlled. This means that when the effect of CGPA on the test scores was taken into account, for both groups, the loss of knowledge from posttest to retention test was not at a noteworthy level.

4.4.2. Is There a Significant Mean Difference between the Traditional Classroom Instruction (Control Group) and Critical Thinking Based Instruction (Treatment Group) in Terms of the Students' Learning After Controlling Their CGPA?

With this question, it was aimed to seek whether there is a significant difference between the mean achievement scores of the students who received criticalthinking based instruction and those of the students who received the traditional classroom instruction when their CGPA is controlled. The mean achivement scores were estimated based on the scores obtained from all three tests; pretest, posttest, and retention test. Before testing this between-subjects effect, the assumption of equality of the error variances for the three test scores was tested. The Levene's test results in Table 45 showed no violation of the assumption.

Table 45

The Levene's Test Results Regarding the Equality of Error Variances for the Pretest,
Posttest, and Retention Test Scores

	F	df1	df2	p
Pretest	2.291	1	118	.133
Posttest	.064	1	118	.800
Retention test	.054	1	118	.816

The test results regarding the main effect of groups on the students'
achievement mean scores were presented in Table 46. According to these results, the
covariate CGPA had a significant impact on the students' achievement scores and
when it was controlled, there was no significant difference between groups. In other
words, the results pointed out that after controlling the effect of CGPA scores,
performance of the students in the treatment group on the average of all three tests
(M^4 = 17.692) was not significantly different from that of the students in the control
group (M = 17,630), $F(1, 117)$ = .020, p = .887.

Table 46

Mixed Factorial ANCOVA Results for the Main Effect of Groups on the Students'
Achievement When Controlling CGPA

Source	df	SS	MS	F	p	Partial η^2
			Tests of Between-Subjects Effects			
CGPA	1	425.340	425.340	75.605	.000	.393
Groups	1	.114	.114	.020	.887	.000
Error	117	658.224	5.626			

4.4.3. Is There a Significant Interaction Effect between Time and Groups in Terms of the Students' Learning After Controlling Their CGPA?

The interaction effect between time and groups signifies that there is a group
difference at each testing condition: pretest, posttest, and retention test. Thus, testing
the presence of this effect tells the impact of critical thinking based instruction on the
students' scores obtained from each test in comparison with traditional instruction.

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[4] Estimated marginal mean score of the students' scores on all three tests

According to the results given in Table 47, there was no significant interaction effect, which implied that the students in both groups performed similarly on each test and their performance from one test to the other was similar. As it can be seen from Figure 5, the estimated marginal mean scores on each test were very similar for both groups. In short, critical thinking based instruction did not cause any difference on the students' achievement and retention compared to traditional instruction.

Table 47

Mixed Factorial ANCOVA Results for the Interaction Effect between Time and Groups on the Students' Achievement When Controlling CGPA

			Tests of Within-Subjects Effects			
Source	*df* [a]	*SS*	*MS*	*F*	*p*	*Partial η²*
Time X Groups	1.854	36.551	19.720	2.092	.130	.018
Error	216.863	2044.335	9.427			

[a] Since the assumption of sphericity was not met, the corrected results based on the Greenhouse-Geisser correction were used.
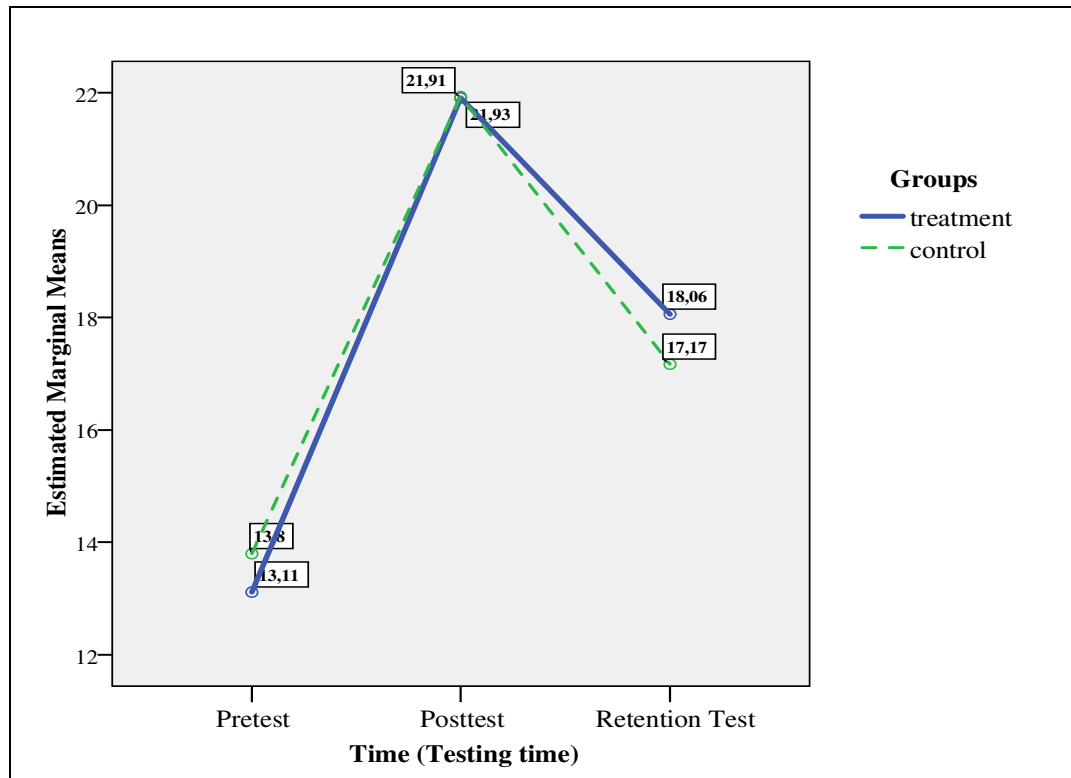
Figure 5. Estimated marginal mean scores on pretest, posttest, and retention test

4.4.4. Is There a Significant Time Difference between the California Critical Thinking Disposition Inventory (CCTDI) Pretest and Posttest Mean Scores of the Students?

In order to test whether the course instruction created any progress on criticalthinking dispositions of the students in both the treatment and control groups throughout an academic semester, means of the CCTDI pretest and posttest were compared through Mixed Factorial ANOVA, testing within subject differences. The descriptive statistics of the CCTDI pretest and posttest scores that entered the analysis are presented in Table 48.

Table 48

Means and Standard Deviations of the CCTDI Pretest and Posttest Scores

Time	Groups	*M*	*SD*	*N*
Pretest	Treatment	225.129	20.251	78
	Control	229.124	18.439	61
	Total	226.882	19.509	139
Posttest	Treatment	230.053	19.075	78
	Control	232.202	21.306	61
	Total	230.996	20.039	139

Before statistical tests, normality test results shown in Table 49 displayed that the CCTDI pretest and posttest scores were normally distributed. That is, the assumption of normality was not violated. Another assumption of Mixed Factorial ANOVA is the assumption of sphericity but this assumption is a concern when there are at least three treatment conditions (Field, 2005). Since, in this analysis, there were two treatment conditions (pretest & posttest), this assumption was not checked.

Table 49

Kolmogorov-Smirnov Normality Tests Results for the CCTDI Pretest and Posttest Variables

	Pretest		Posttest	
	K-S test	*p*	*K-S test*	*p*
Treatment groups	.789	.562	.911	.378
Control groups	.658	.779	.466	.982

The results in Table 50 showed that for the students in both groups, there was a significant difference from pretest (M = 227.127) to posttest (M = 231.127), $F(1, 137)$ = 6.528, p = .012. This signified that whatever instruction the students were exposed, their tendency to use critical thinking skills significantly increased in both groups within a semester but with a small effect size (*Partial η^2* = .045).

Table 50

Mixed Factorial ANOVA Results for the Main Effect of Time on the Critical Thinking Disposition of the Students

Source	df	SS	MS	F	p	Partial η^2
			Tests of Within-Subjects Effects			
Time	1	1095.751	1095.751	6.528	.012	.045
Error	137	22995.393	167.850			

Besides, the pretest and posttest mean scores (lower than 240) pointed out that the critical thinking disposition of the students not only in the control group but also in the treatment groups were, on the average, low in accordance with the criteria given by Kökdemir (2003). Because, according to Kökdemir's (2003) study, if the adapted CCTDI score of a student is less than 240, his/her disposition is low; if it is higher than 300, his/her disposition is high.

4.4.5. Is There a Significant Mean Difference between the Control and Treatment Groups in Terms of the Students' Critical Thinking Disposition?

In this study, it was also aimed to ascertain the impact of critical thinking based instruction on the critical thinking disposition level of the students in the treatment groups as compared with the traditional instruction in the control groups. Thus, whether there is a significant difference between the control and treatment groups in terms of the CCTDI mean scores was tested via Mixed Factorial ANOVA. The CCTDI mean scores were estimated based on the mean of the students' CCTDI pretest and posttest scores.

Before testing between subject differences in terms of the students' critical thinking disposition, the assumption of equality of error variances of the CCTDI pretest and posttest scores was checked. The Levene's test results in Table 51 indicated that the assumption was met.

Table 51

The Levene's Test Results Regarding the Equality of Error Variances for the CCTDI
Pretest and Posttest Scores

	F	df1	df2	p
Pretest	.001	1	137	.971
Posttest	1.010	1	137	.317

Upon ensuring this assumption, the Mixed Factorial ANOVA results regarding between-subject differences in Table 52 revealed that the CCTDI mean scores were not significantly different between groups. In other words, there was no significant difference in the effect of critical thinking based instruction ($M =$ 227.591) on the critical thinking disposition of the students compared to the traditional instruction ($M =$ 230.663), $F(1, 137) = 1.050$, $p= .307$. Thus, it can be inferred from this result that the students in both groups, on the average, showed similar tendency to use critical thinking skills.

Table 52

Mixed Factorial ANOVA Results for the Main Effect of Groups on the Critical
Thinking Disposition of the Students

Source	df	SS	MS	F	p	Partial η^2
Groups	1	322.942	322.942	1.050	.307	.008
Error	137	42119.284	307.440			

Tests of Between-Subjects Effects

4.4.6. Is There a Significant Interaction Effect between Time and Groups in Terms of the Students' Critical Thinking Disposition?

Finally, the significance of the progress from pretest to posttest of the CCTDI was compared between the treatment and control groups. The results of Mixed Factorial ANOVA testing this interaction effect between testing time and groups were given in Table 53.

Table 53

Mixed Factorial ANCOVA Results for the Interaction Effect between Time and Groups on the Critical Thinking Disposition of the Students

		Tests of Within-Subjects Effects				
Source	*df*	*SS*	*MS*	*F*	*p*	*Partial η²*
Time X Groups	1	58.352	58.352	.348	.556	.003
Error	137	22995.393	167.850			

According to these results, the interaction effect between testing time and groups on the students' critical thinking disposition was not significant, $F(1, 137) = .348$, $p= .556$. As it can be seen from Figure 6, despite of being smaller, the progress from pretest ($M = 225.129$) to posttest ($M = 230.053$) was higher for the treatment groups when compared to that for the control groups ($M = 229.124$ and $M = 232.201$, respectively) but this did not cause any significant difference between groups. For this reason, it can be deduced that critical thinking based instruction did not result in a remarkable change on the students' disposition from pretest to posttest in comparison with the traditional instruction.
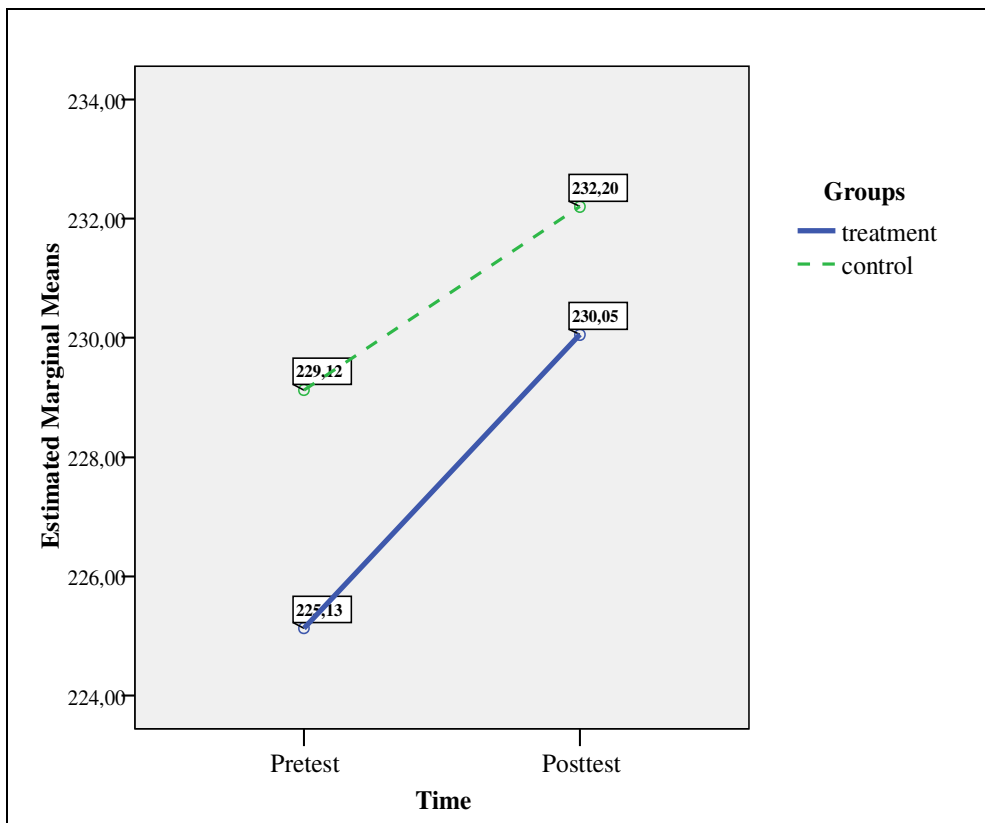
Figure 6. Estimated marginal mean scores on the CCTDI pretest and posttest

4.4.7. What Are the Opinions of the Students about the Impact of Traditional Course and Critical Thinking Based Course?

In order to determine the perceptions of the students toward the impacts of the course on learning and thinking skills, four focus group interviews were carried out with 22 students in total; 11 from the treatment and 11 from the control groups. Content analysis of data gathered from the interviews yielded various themes and codes, which were presented in Appendix T. These themes were "contributions to teaching skills", "contributions to thinking skills", "acquisition of course topics", "reasons affecting the acquisition of course topics", "effectiveness of teaching methods/strategies/activities", "participation", and "attitudes toward course instruction". The results in this part are presented according to these themes.

Moreover, since the anonymity of the students' name was required to be preserved, the following codes in Table 54 were used.

Table 54

Codes for the Students Who Participated in the Focus Group Interviews

Control 1	Control 2	Treatment 1	Treatment 2
SC^{a}1^{b}G^{c}H^d	SC6BL	ST1GL	ST7GH
SC2GM	SC7BM	ST2BM	ST8BH
SC3GL	SC8BH	ST3BL	ST9BM
SC4BM	SC9GL	ST4BH	ST10GM
SC5BL	SC10GH	ST5GH	ST11GL
	SC11GM	ST6GM	

^{a}, Groups (C= Control, T= Treatment); ^{b}, The student's number; ^{c}, Gender (G= Girl, B= Boy)
^{d}, CGPA Level (H= High, M= Middle, L= Low)

4.4.7.1. Contributions to Teaching Skills

The results revealed that the interviewed students from both the treatment and control groups agreed on the necessity of this course for teacher education. Because, they indicated that it was beneficial in the development of professional and personal characteristics toward teaching profession.

Even some students expressed that they did not take this course into account at the beginning but then they realized its importance and necessity. In this respect, ST8BH, ST10GM, ST11GL and SC9GL expressed;

> To be honest, my expectation from the course was firstly to pass. But in the course of time, as I learn the content of the course, as a result of activities we

189

did in the class, after I see what benefits it will provide and what gainings it will bring forth, I changed my mind. I think that rather than only passing the course, I would be able to improve myself, there would be some changes in my communication with people, I would be able to understand and interpret thoughts of people (ST8BH).

At the beginning of the course, I would just attend the course, succeed in the exams…I mean I woud do what I am supposed to do for these. When we see the content of the course, I noted how much this course is related to us….I have started to realize how I should behave people and I started to think that in what ways, I should actually behave and meet people's needs (ST10GM).

In the first weeks, I was thinking to pass the course as every student do. But as the course progressed, how much I can improve myself in terms of the course content and information that I will transfer to students and what and how I can transfer them to students became important for me. In this course, all required information as to how we can transfer these to students was provided. I think that these would be beneficial in the future. (ST11GL).

After a few lessons, I understood that this course would be necessary…the information [given in the course] would be really very helpful in teaching …. (SC9GL).

When the results were examined, it was noticed that even though the students from both groups expressed similar benefits of the course, those from the treatment groups made more comprehensive explanations in this respect; thus, their expressions were frequently given herein.

Regarding the contributions of the course to the development of *professional characteristics*, they explained that the course helped them to have knowledge about development and learning and to understand students' behaviors and needs:

This course contributed me very much in terms of knowledge. At least I acquired information about how to behave in teaching…In my dormitory, my friends have been prepared for KPSS. In order for just testing myself, I entered to KPSS. I did more than my friends … (SC8BH).

First of all, I think that [this course] helped us in understanding how to approach to students, in shping our behaviors toward them….consequently, this course taught us what we can transfer to the students….. (ST9BM).

It was also stated that this course contributed them to learn how to teach, what to teach, how to behave and to communicate, and what to do regarding problems:

…I would be more comfortable in my relations with my students…This course gave me background information about how to attract their attention or what their facial expressions mean. Even though, all information was not borne in my mind, the course provided a basic knowledge. It has already caused me to determine and plan what I should search, what kind of problems

190

there might be, at which points there might be problems, what alternatives I can think… (ST7GH).

I think that this course contributed me to learn how to communicate with students, how to attract their attention, how to teach a lesson and how to adapt them to lesson, how to attract their interest (ST8BH).

…even though I do not think so, we are here to be a teacher. This course give us lots of ideas about when we become a teacher how we should behave, how we can be effective, how can we express ourselves better (ST3BL).

Moreover, the students in the treatment group also stated additional benefits of the course. For instance, as said by ST7GH, this course contributed her to gain the consciousness of being a teacher:

This course recalled that we would be teachers. In the other courses, we are learning…until we pass the exams we load our brains with information…. but this course recalled that there are places (schools) where we can use this information and actually, our main goal is teaching…. (ST7GH).

Even, a few students in the treatment groups mentioned that because of the effectiveness of the activities that they experienced, they would apply what was done in the class when they become a teacher.

…If I teach a lesson, I will try to teach in this way. …I learned that a course can be taught in this way... (ST10GL).

In terms of knowledge, I learned lots of thing that I did not know…besides this, as a classroom environment, [the instructor's] teaching in the class by using questioning, participation of the other students or the like… I think I will be able to use these in the future. (ST5GH).

Concerning the benefits of the course for the development of their *personal characteristics*, some students from both groups stated that as a result of drama in the control groups and various activities, presentations and questions in the treatment groups, they could express their own opinions, improve self-confidence, and speak in front of people.

…Self-confidence might be developed for our friends who have not. May be, I do not have, either…and may be it was developed a little. When becoming a teacher, one should speak in a society, one has to control that society….we will develop these by means of these courses. (ST2BM).

The most important contribution of the course is to express our thoughts, to express ourselves….I could not have spoken in courses. I can do a little now. This development was good… (ST5GH).

…We could not have spoken to a group of people. But here, we can speak to a group. We have thrown off this shyness gradually… (SC6BL).

Although it could not be reflected here, in the interviews contributions of the course were frequently pointed out by the students from the treatment group. This result led the researcher to deduce that in comparison with traditional instruction, critical thinking based instruction might have been more effective from the standpoint of the interviewed students' professional and personal development.

4.4.7.2. Contributions to Thinking Skills

Similar to the results drawn from the student journals, the students' responses in the focus group interviews displayed that critical thinking based instruction encouraged these students from the treatment group to use thinking skills more. In this regard, various activities/strategies implemented in the course were mostly referred because of providing opportunities to use thinking skills in a variety of ways, as said by ST2BM.

…I believe that in- and out-class activities improved our thinking skills

This was stated as one of the most effective aspects of the course by ST5GH and ST10GM;

…being able to improve my thinking skills was very affirmative (ST5GH).
...the activities encourage us to think… (ST10GM).

In addition, some students from the treatment groups specified how they could use thinking skills by means of in-and out-class activities/strategies such as making reasonable comments/inferences, finding solutions, individual thinking, finding differences, exploring their own perspectives, relating topics to real life, establishing relationships among topics, associating with topic, evaluating theories/perspectives, evaluating their own reasoning, realizing other's opinions, thinking strategically in a short time, defending a view, and considering from different point of view.

Of these students, ST3BL, ST5GM and ST9BM indicated that the course instruction encouraged them to make comments (S-32)[5] and generate solutions (S-19):

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[5] These are strategies promoting critical thinking (see Table 2).

…in-class activities, article and project studies were studies that required making a comment. Thus, I think that by making comment, we could use our thinking skills (ST3BL). (S-32)

the course stimulates persons to make serious comments very much... (ST9BM). (S-32)

Especially in case studies, making comment skill was improved. Besides this, the project was also requiring interpretations in making suggestions and finding solutions… (ST5GM). (S-32, S-19)

For ST7GH, the activities encouraged her to think strategically in order to make reasonable inferences (S-32) and think strategically:

…when this kind of things [activities] is given, a conclusion is expected. Time is limited. 10 minutes are given. 5 minutes are given. You have to think. Immediately, you give yourself to think strategically; that is, you only focus on thinking. Naturally, I see an impact in my thinking skill in this respect. Not only at these times but also at any moment, we think in a different way but not at this level. May be we stop in the middle but here I have to reach a conclusion. I have to make a relationship. For this reason, the activities were very effective for me (ST7GH).

In this regard, ST9BM thinks that case studies improved these thinking skills very much.

…case studies improves a person's thinking skill very much…for instance, in 40 minutes, a case is given to you. You have to reach a conclusion in 40 minutes…you have to produce a writing properly. Here, a person thinks like it or not. What is right? What is wrong? That is, there is a significant contribution of case studies to one's thinking skills.

ST9BM also address the effectiveness of the activities on finding differences (S-29) and exploring their own perspectives (S-12):

…[the instructor] gives two views of writers or theorists and then, the differences between them is asked… In addition to differences between them, [the instructor] asks us our own views at the end. If there were only one view, one may not bear it them in his mind. But when striking two views wth each other, the difference between them can be retained more permanently. This activity is really good. In addition, exploring our own view as a result of striking these two views is very original.

As for ST10GL, the most positive side of the course was the activities driving them to think particularly how to relate the topic to each other, to their own development and to real life (S-27):

A topic taught may direct us like this: I did similar thing in the past. This topic is related to this. You relate the topic to yourself…then you think that 'I have to apply this to a child'. These thought pass through my mind. In a way, these provide thinking….the activities forcing us to think all of these. If I have to do this I need to know something. I turn back to the previous topics. I think actually how can I do?...

During interviews, while they talked about the effectiveness of the activities on thinking in general, some referred to specific activities. For instance, ST11GL stated the impact of graphic organizers.

…in graphic organizers, the information is already given in the book but how can I present it [in the organizer]? How can I select and transfer information? In this respect, they [graphic organizers] were effective.

Regarding journals, ST9BM indicated that they reviewed the 120-minute lesson and think and thought what was retained in their mind by means of journals. Moreover, as an in-class activity, they had been asked to prepare a concept map with the cards on which the concepts were written. ST8BH explained that in that activity he strived to relate the concepts to the topic.

Besides these, concerning article critique it was said that it helped them to learn how to evaluate/critique an article (S-21) and to think how to relate it to the course, how to make inferences, how to reach conclusion, and how to make comments (S-32):

…from now on, we can evaluate articles…because when [the instructor] asked us to evaluate an article, [the instructor] gave us a worksheet on which all steps we had to follow in an article evaluation were given, we wrote according to it and from now on, even if we do not have this worksheet in our hand, we can write an article critique similar to that…this was also helpful in improving ourselves and making search in other courses… (ST7GH). (S-21)

…in article…we found answers to what is its relation to development and learning? Why is it important for education?...I believe that in all of these [she means not only article but also case studies and project] I used my thinking skill and it was improved. (ST5GH). (S-32)

…my article was already about higher level thinking skills. Moreover, especially conclusion, interpretation and discussion parts [in the article evaluation criteria given to them], I thought one by one what I can write… (ST6GM). (S-32)

On the other hand, for the students who were exposed to the traditional instruction, the use of thinking skills was limited. Drama and questioning were

explained as the methods that were effective in stimulating thinking. For drama, SC5BL said that it helped them to interpret incidences that they encounter in real life (S-20). SC11GM and SC8BH also indicated that it was beneficial in proposing different creative thoughts and in relating it to the topic.

> …since presenting something to people is hard, you have to think in detail. This pushed us to think…what can I do? What can be better?...both making people laugh and teaching are very hard. This was pushing us to think… (SC11GM).

> the first thing that provided me to think was drama…in order to explain a principle [of a theory] you are explaining your own opinion…you are thinking for example if we do this way or if we do that way, it would be better…. [when watching the other groups' drama] sometimes I think what part of the topic was supposed to be explained here… (SC8BH).

Regarding questioning, SC9GL and SC10GH stated that questioning technique forced them to think:

> …[the instructor] does not say directly 'education is this'. [The instructor] wants us to think, [the instructor] pushes us to think. Thinking this is very nice… (SC9GL).

Besides these, only one student (SC6BL) expressed that there were various and different views of the theorists in the course and he evaluate the views that he did not agree with (S-26).

In conclusion, there are evidences that critical thinking based instruction enriched with a variety of activities and methods stimulated and cultivated different thinking skills as it was expected.

4.4.7.3. The Acquisition of Course Topics

In the focus group interviews, information about the students' perception toward their competency in the acquisition of course topics was also gathered in order to determine the impact of the course on this matter. The results are presented in Table 55 in which the responses "competent" and "very competent" were considered as *competency* while the responses "incompetent" and "little competent" were deemed as *incompetency*.

Table 55

The Prospective Teachers' Responses Regarding Their Competency in the Course Topics (C=Competent & I= Incompetent)

Topics	Treatment Group 1						Treatment Group 2					# of C
	ST1GL	ST2BM	ST3BL	ST4BH	ST5GH	ST6GM	ST7GH	ST8BH	ST9BM	ST10GM	ST11GL	
Basic Concepts	C	C	C	I	C	C	C	C	C	C	C	10
Physical D.	C	C	C	C	C	C	C	C	C	C	C	11
Cognitive D.	C	C	C	C	C	C	C	C	C	C	C	11
Linguistic D.	C	C	I	I	C	C	C	C	C	C	C	9
Moral D.	C	C	C	C	C	C	C	C	C	C	C	11
Personality D.	C	C	C	C	C	C	C	C	C	C	C	11
Classical Cond.	C	C	I	C	I	I	C	C	C	C	I	8
Operant Cond.	C	C	I	C	C	I	C	C	C	C	C	9
Social Learn. T.	C	C	C	I	C	C	C	C	C	C	C	10
Gestalt T.	C	C	C	I	C	C	I	I	C	C	I	7
Inform. Proc. T.	C	C	C	I	I	C	I	C	C	C	C	8
Constructivism	C	C	I	C	C	C	C	C	C	C	C	10
Humanistic App.	*	C	I	C	C	*	C	I	C	C	C	7
Motivation	C	C	C	*	C	C	C	C	C	C	C	10

Topics	Control Group 1					Control Group 2						# of C
	SC1GH	SC2GM	SC3GL	SC4BM	SC5BL	SC6BL	SC7BM	SC8BH	SC9GL	SC10GH	SC11GM	
Basic Concepts	C	C	C	C	C	C	C	C	C	C	C	11
Physical D.	I	I	C	C	C	C	C	C	C	C	C	9
Cognitive D.	I	C	C	C	C	C	C	I	I	C	C	8
Linguistic D.	I	I	I	I	I	I	C	C	C	C	C	5
Moral D.	C	C	C	C	C	C	C	C	C	C	C	11
Personality D.	C	I	C	I	C	C	C	C	C	C	C	9
Classical Cond.	C	C	C	C	C	C	C	C	C	C	C	11
Operant Cond.	C	C	I	C	I	C	C	C	*	I	C	7
Social Learn. T.	C	C	I	C	C	C	C	C	C	I	C	9
Gestalt T.	C	I	I	I	I	*	I	I	*	I	I	1
Inform. Proc. T.	C	C	I	I	C	C	C	C	C	C	C	9
Constructivism	C	C	C	C	C	I	C	C	C	C	C	10
Humanistic App.	a	a	a	a	a	C	C	C	C	I	I	
Motivation	a	a	a	a	a	C	C	C	C	I	I	

*, They had not attended the lesson at that week.

a, These topics had not been taught in this group yet when they were interviewed.

According to the results, in the topics except for "Basic Concepts", "Classical Conditioning" and "Information Processing Theory", the students from the treatment groups were more competent than those from the control groups. It was also

remarkable that almost all students from the treatment groups felt competent in nearly all topics. The lowest competency was seen in Gestalt Theory but only for 4 students. On the contrary, in the control groups, the number of students who felt incompetent in Gestalt theory is 10; nearly all of them.

The more important issue in this regard was the reasons underlying the students' acquisition of content knowledge. Therefore, findings regarding these reasons were discussed underneath another theme below; "reasons affecting the acquisition of course topics".

4.4.7.4. Reasons Affecting the Acquisition of Course Topics

For both groups, it seems that they had difficulty in the learning theories; especially Gestalt Theory. According to the incompetent students in the treatment groups, the reasons hindering the acquisition of course topics stemmed from having stress of final exam, not considering those topics important, not doing teaching practice, not understanding how to use, confusing the theories/concepts with each other and not understanding the logic behind theories.

ST7GH pointed out the final exam as the reason for being incompetent and explained that because of final exam, her brain was full and all courses were intermingled. As another reason, ST8BH indicated that because of not considering the topics (Gestalt and Humanistic Approach) as important as the other topics, he did not study them. Although ST6GM felt incompetent only in Classical and Operant Conditioning topics, she expressed that since there was not any teaching practice of the theories, she did not feel competent enough to be able to apply them when becoming a teacher. Regarding these topic, she also indicated that she has been confusing these theories with each other. Similarly, as for ST5GM, the reason for being incompetent in Classical Conditioning was to confuse the concepts in this topic. In addition, ST11GL mentioned that she could not understand the logic behind the theories (Classical Conditioning and Gestalt). On the other hand, when a question regarding the impact of the course instruction on her incompetency was directed to ST11GL, she stressed;

> The course instruction is very good in terms of competency and I think that actually only the course progress was effective for the topics that I am competent. Because, I do not study at home very much, I mean I cannot.

197

Even though these five students' expressions address the inadequacy of critical thinking based instruction in clarifying the theories and ensuring the perception of the importance of the topics by all students, the activities/strategies taken place in this instruction were perceived mostly influential on learning. These were explained in the following section under different theme.

Concerning feeling competent, they specified a number of reasons such as studying and repeating the topics, considering them important, being attracted, relating them to each other and reality, having a prior knowledge, understanding how to implement in teaching, and doing preliminary study.

As for the students in the control group, the incompetencies were arisen from either the student-originated reasons or the instruction-originated reasons similar to those in the treatment group. The student-originated ones were indicated as not studying, not repeating, not considering important, not attending the course, and not doing preliminary study. Other stated reasons such as confusing the theories, not understanding the topics or the relationship among the topics, not being able to form wholeness, and not being attracted addressed the inadequacy of the instruction. It seems that there were more difficulties in the clarification of the theories and in attracting the students' attention in the traditional instruction.

Besides these, in the control group, the students who perceived themselves competent predicated the reasons of their competency on having done regular studies and preliminary studies, having had prior knowledge, having listened to the lessons very well and having performed drama on these topics or on the attractiveness and understandability of these topics.

4.4.7.5. Effectiveness of Teaching Methods/Strategies/Activities

In the treatment groups, a variety of methods/strategies/activities were implemented. The focus group interview results did reveal their impact not only on cultivating teaching and thinking skills but also on promoting and assisting learning. In this section, the students' opinions and impressions regarding these activities/methods such as case studies, article critique, project, graphic organizers, student journals, drama and follow-up tests were presented.

Concerning *case studies*, six students mentioned that case studies were effective in learning and provided visualization of the theories in their mind. A few

students reflected on *the article critique* and *project* that these were very effective activities because of contributing to their research skill.

For *graphic organizers*, while ST6GM considered it unnecessary, ST1GL, ST3BL and ST9BM agreed that they were very beneficial in reviewing and studying the topic beforehand and determining the points that were not understood:

> …the graphic organizers provided us to come to class after reviewing the lesson at home and this provided us to learn completely the points that were not understood…In addition, the repetition of the lesson beforehand was very good… (ST9BM).

> …the graphic organizers that we prepared before the lesson were providing us to come to class as being prepared. Coming to class as being prepared provided us to understand the lesson and participate into the lesson… (ST3BL).

Regarding *journals*, while ST9BM complained about facing with the same questions each week in the journals, ST2BM pointed out that by means of journals, they reviewed the lesson so it contributed to the repetition of the lesson.

In addition to these, the contributions of these activities to development of the students' teaching and thinking skills had been also mentioned previously; therefore, these were not repeated herein. It was also noticed that these results regarding activities/methods/strategies were consistent with those encountered in the journals.

As for the teaching-learning methods/activities/strategies in the control groups, only drama was performed and follow-tests at the end of each week were carried out. Even though, the students pointed out the problems and, so, made several suggestions, it seems that the *drama* in general had positive effects on to the control groups. Some students indicated that dramas was enjoyable; even for SC8BH, it had been the main reason for coming to school. More than half of the students highlighted that dramas were effective in learning, understanding and retaining the topics by putting theories into practice and concreting abstract theories:

> …drama is necessary….when putting theory into visualization, it is retained easily….. When we visualized the case again in our mind, we understand the given message better… (SC6BL).

> …in terms of retention, when we study later, we can remember that our friends had done this, they wanted to do this. Since it is visual, it is good as for me… (SC10GH).

…[the instructor] were explaining information, it is in our mind only verbally but when it is given visually, it is retained much more. Moreover, you study drama in detail….only giving information is boring but both giving information and being enjoying are better….more beneficial… (SC9GL).

Drama was effective…I did not depend on only the book….I could notice [the application of theories] that we encountered in daily life… (SC2GM).

The responses also revealed that drama contributed to the development of the students' self-confidence. They stated that due to drama, they could overcome their excitement.

We could not speak in front of a society. But here we speak to a group of people. We are overcoming this shyness gradually… (SC6BL).

…in the drama, I conditioned myself….'I did, I did; if I did not, I would not do anymore. This is my turning point'…now I became like this [she overcame her excitement]… (SC11GM).

Moreover, it was expressed that it provided better communication within the groups and contributed to self-evaluation:

In drama, there was a group study. There was not communication among group members. A good harmony in the group was provided. You produce it[drama] yourself. You write and play it…in the class…very good…being excited when playing it…it was really nice (SC9GL).

When watching the others' dramas, I realized my deficiencies…that is, I was overcoming my own deficiencies by looking at their deficiencies… (SC11GM).

On the other hand, SC7BM strongly disagreed with them and even he argued with other students in the interview. He asserted that drama did not help understanding, because students in drama did not aim to explain theories; for him, they only aimed to laugh the class and attract the class's attention. He added that only after the instructor explain what is what, he could understand what was given in the drama; otherwise, he could not understand its relation to the topic or theory. As another problem with drama, he indicated that the responsibility of group members was not fair.

Actually, four more students think also that drama was not effective in learning very much. In this respect, the explanation of SC1GH was very remarkable because she admitted that as a group member, she did not know her drama topic, and even, did not read until they performed the drama. According to her, only scenarist knew the topic;

200

…Only scenarist knew the topic well. We were thinking only how we can play better. I did never read the topic before drama. Then, I realized that I did not know anything and after that I read it…

Concerning *follow-up tests*, the students in the control groups stated that it was effective in determining their own deficiencies and in self-evaluation and it was helpful in repetition and retention. In addition to these, as an effective side of the course, SC6BL indicated that the repetitions and explanations after drama and follow-up test were very important.

4.4.7.6. Participation

One of the important factors affecting learning is the participation of the students and their engagement in activities or tasks carried out in a course. It is perceived as a key to enhancing learning and maintaining motivation (Eggen & Kauchak, 1997). Therefore, the students' responses in this issue were of value for determining the impact of the course instruction on their participation.

According to the responses, the students in the treatment group had mostly participated into the class and engaged in the activities. This result can be more clarified by the following students' expressions:

I think that when I had a word to say, when a question was asked, when there was an activity, or when there was a group study, I was active….[the activities] were enjoyable…when sitting aside without participating, you only sit idly. You do not contribute to anything. This bothers me….but I think that when you participate [into the activities], it becomes enjoyable. Since I express my own thoughts…because of being enjoyable, I participate (ST8BH).

…the lesson will pass anyway… either by being bored or by being active. At least, in order to spend time efficiently….Indeed, [the activities] were enjoyable. Thus, I participated…the environment in our course was completely student-centered…questions were being asked and activities were taking place continuously. It was not possible to keep myself from the course… (ST7GH).

…in student-centered education, students would be active but teacher would not stand without doing anything. Teacher would guide students continuously, ask questions and have students to be active. [The instructor] were doing these in the class completely…we could not stay without doing anything…..asking us questions, showing different issues and interesting things attract our attention like it or not…then these provides participation. Concerning participation, to say our own opinions is very nice. How am I going to think? What will my friends think? (ST9BM).

On the other hand, the results elicited that the students in the control group did not participated into the class very much. Only one student, SC7BM, had shown active participation in order to ask questions, to make critiques or to exchange views and because of having such a participatory characteristic. Because of being shy or excited, the others had participated into class only in drama and when a question was asked.

However, there were impressive reflections on participation. For instance, as for SC11GM, who was an excited student, questioning had encouraged her to answer a question without waiting for being asked.

> [the instructor] had asked me a question. I could not answer the question because of being excited whereas I knew it. But when [the instructor] asked, I forgot. Next week I could say something in spite of being excited. I said before [the instructor] asked me…

Likewise, another excited student, SC2GM, stated that on account of a comfortable classroom environment, she could speak in a class for the first time in this course.

Shortly, these responses displayed that student-centered learning environment and enjoyable and attractive activities/strategies such as questioning and group study encouraged them to participate. Eggen and Kauchak (1997) also propose these strategies to promote involvement of students.

4.4.7.7. Attitudes toward the Course Instruction

In the interviews, the students expressed positive and negative attitudes toward the course instruction. Even though, the students in both groups mentioned less number of negative sides than positive ones, negativeness was more frequently expressed by the students from the control groups.

One of the notable impacts of critical thinking based instruction on the students was that they encountered such a learning environment for the first time and they wished they had had such an environment in other courses as well. Such expressions had been reflected in the journals, as well. The following expressions quoted from the interviews would reflect their impressions and portray the classroom atmosphere better:

> ...when I first attended the class, I felt the difference of the course…8 years elementary school, 3 years high school, I came to university, one year…in the second year, I felt the difference of the university and the course in the first

lesson…well, the journals, graphic organizers bring up the difference of the course…….In this course, the thing that has never been given throughout our education life was given to us…I do never remember that we have searched and written an article critique in any course. We come to school with grade concern all the time and aim to take a good academic record sheet to show our family…but here in this course, the situation is very different, a person improves him/herself and tries to transfer something to other people….beforehand we concerned about taking our grades and passing the course…but in this course, on the contrary, we think that we should learn something so that we can teach something in the future… (ST9BM).

…the best side of the course for me was that: we find many opportunities to speak on the contrary to other courses, in which there is a continuous lecturing. But here, to make presentations, to do something [activities]…we have to participate (ST2BM).

…discussion environment, such an environment has been never happened till now… (ST5GH)

…I cannot speak in most of other courses since we cannot see such an environment….we listen and go out…I did not believe that this would change….but it happened. I believe that in Development and Learning course I could express myself easily….[he then added] I am satisfied with this course, because when I compared it with other courses, the impact of this course is much more. That is, at least I acquired more or less knowledge about topics, issues in the topics. I can explain these topics without looking at the book. This is due to these activities…these were more effective for me compared to other courses. I am in favor of instruction of not only this course but also other courses in this way… (ST3BL).

Moreover, since the students in the treatment group think that the course and activities were effective in learning, all said that they were satisfied with the course. Therefore, they responded that this course should be taught in the same way with a few suggestions such as more visual materials or less assignments. Actually, their complaints were about the intensity of the course, particularly having various activities and assignment each week. The similar complaints were declared in the journals and in the class as well. Even, a student, ST7GH said that at the beginning, there were lots of activities but then it decreased in the later weeks and the course became more effective:

… at the beginning of the semester, we became drunk [with activities]. Even, I was feeling their tiredness whole day…that is, these were tiring…. In the class, we were doing lots of activities. We were leaving one and starting another one. May be some could not have been completed. Then, we were starting the other one. That is, some were disconnected….when we started to slow down the activities, in my opinion, this was more effective…I wish we had taken in this way from the beginning of the terms on

203

On the other hand, she added;

> …we were attending the class by saying what we would do this time, today what we will see. But because of being different, each one was very effective……We were saying uffff, puff [for the activities] but now I think that from now on I wish the other courses to be like that… (ST7GH).

Actually, the reason of being tired or bored of activities and assignments might be caused by not having encountered such a student-centered and thinking based environment before and thus not being familiar with it (Harrigan &Vincenti, 2004); as ST10GL said:

> …we were actually strained, bored at some points...this is an instruction method that we are not used to see…we will do something, we will participate in the class, there will be activities, there will be research. These actually strained and bored us but this is stemmed from not having seen such an instruction before. I wish there had been such a system in our schools we had gone to till today…so that I am sure that we would have been educated as more qualified and we would not have been strained…If I teach a course, I will try to teach in this way (ST10GL).

Another reason might be the schedule of the course. Because, in the interview, almost all students complained that hard courses including Development and Learning course had scheduled in the same semester and even in the same day.

Besides these, they generally highlighted positive aspects of the course such as creating an attractive, interesting, enjoyable and comfortable learning environment, promoting thinking skills, increasing attendance and active participation, providing better communication and interaction, and providing retention:

> …The Development and Learning course really takes one's negative energy, makes him/her active, students feel more energetic… (ST9BL).

> …as a positive side of the course, our friendship relations in the class have changed. This course was beneficial in this respect…I observed that the participation of persons who had difficulty in expressing themselves increased and they wanted to talk willingly…(ST7GH)

> …I do not like verbal courses but as I see the impact of those activities on the retention, my interest to the course increased… (ST2BM).

Even, for ST9BM, the course had become the reason for coming to school:

> …when I lost my enthusiasm for school because of a personal problem, this course made a positive impact on me. Sometimes this course was my reason for coming to school.

204

As for the students in the control groups, nearly half of them agreed that the instruction of the course was good. It was indicated that the course provided a comfortable learning environment in which they could express their opinions easily (SC2GM, SC3GL & SC5BL) and teacher-student interaction was different from the other course (SC6BL). Two students (SC7BM & SC8BH) in the control groups also stated that they enjoyed the course:

> The lesson was not boring. We could not understand how the time passed. Sometimes, it was finished very quickly….[the instructor's] way of teaching, our classmates' participation [especially in drama] was enjoyable… (SC7BM).

Moreover, SC6BL and SC11GM indicated that there were both student- and teacher-centered instruction; when there was a drama, the course was student-centered; in other cases it was teacher-centered. SC6BL was pleased with such an instruction:

> …only one-sided that is, student-centered is not always appropriate, there have been some problems so students might not understand properly. For me, it is solely not a solution. Sometimes it should be student; sometimes it should be teacher-centered like this course….

On the other hand, SC11GM disagreed with him in this respect. She pointed out that this course should have provided a balance between student- and teacher-centered instructions and both should have appeared in a lesson at the same time but this was not achieved in this course. She meant that the course was more teacher-centered and there was not active participation of the students, as claimed by SC9GL.

Besides these, SC4BM mentioned that neither drama nor the instructor's way of teaching was effective; thus, he thinks that this course did not meet his expectations from the course:

> …drama was effective but very little. For me, it is very little. In my opinion, [the instructor's] way of teaching was not very effective. [The instructor] used the projector; that is all… Ok… May be, [the instructor] tried to transfer what she knows but [the instructor] explained topic by only one example...

SC2GM complained that since except for drama, any responsibility was not given to them in the course they did not study topics.

Because of these problems, the students in the control groups suggested a variety of methods or activities that they wished they had. These were more student-

centered instruction, active participation, research, presentation of the topics by students, individual or group works, assignments, article critique, more thinking-based activities, discussion, graphic organizers.

Actually, it can be inferred from these suggestions that they wanted to have benefited from the activities/methods/strategies already used in the treatment groups. In this regard, the following verbatim quotations support this inference because these two students directly stressed that they would like to have been in the treatment group:

> …the other group is very good. We see them they prepare scheme [graphic organizer] for each chapter. (The other voices said: they do not think so!..)…If they were us, if they could see from our point of view, they will think so…for midterm and final they are more relaxed because they already know better [than us] …I would like to have been in the other group… (SC3GL).

> …if [their choice for being in the treatment or the control group] this is asked at the beginning of the terms, students will choose the easiest way and so our [control] group but at the end of the semester the other group is chosen as for me…because it seems to me that I felt myself more competent if I were in the other group (SC9GL).

Consequently, the interviewed students from the treatment group demonstrated positive attitudes toward critical thinking based instruction because of its contributions to their learning and development in terms of teaching and thinking skills. It seems that they were also impressed by the attractive, interesting, different and comfortable atmosphere created by such thinking based activities/strategies/methods. Though the students from the control groups also reported positive attitudes toward the course, they stressed that they perceived the course teacher-centered.

4.5. Summary

In this chapter, findings regarding the research questions of this study were presented and discussed under four main sections in accordance with four stages of CIPP model; context, input, process and product evaluation.

At the context evaluation stage, needs regarding objectives, content, teaching-learning process and assessment techniques of Development and Learning course were identified from various stakeholders' standpoint. These stakeholders

involved in the study were the vice chair of the Department of Accounting Teacher Education, an instructor teaching pedagogical course in the faculty, an expert at MONE, undergraduate students (sophomores, juniors, seniors) and graduates. The results of individual interviews with the vice chair, instructor and expert revealed needs for teaching practice putting theory into practice and thought encouraging learning environments. Data gathered from the questionnaires for undergraduates and graduates elicited that they had problems in attaining the course objectives although they generally considered these objectives important to attain. Findings also highlighted that this problem might have been arisen from inadequacy and ineffectiveness of teaching-learning process of the course because according to the responses, the activities specified as effective for learning and improving thinking skills had been never, rarely or sometimes implemented. Shortly, these results addressed instructional needs particularly regarding the incompetencies of the respondents in the attainment of course objectives and the inadequacies of teaching-learning activities/strategies. Data also revealed the undergraduates' and graduates' preferences in relation to all aspects of the course (objectives, content, teching-learning process and assessment).

Based on these results identifying instructional needs, problems and preferences, Development and Learning was redesigned at the input evaluation stage of the study. The course was enriched with critical thinking based instruction by taking the stakeholders' preferences into account. A variety of active learning activities stimulating critical thinking skills were included.

This redesigned course was implemented throughout a semester in the treatment groups and it was evaluated by means of student journals from the students' points of view at the process evaluation stage. Their reflections showed that the instruction of the course with critical thinking based activities/methods/strategies enhanced learning and stimulated thinking skills in various ways. Some difficulties such as being overloaded with assignments and not being adapted to their groups were also experienced but these were overcome by making some revisions in the course implementation.

Finally, at the product evaluation stage, achievement pre-posttest and retention test and the CCTDI pre-posttest results were compared between the treatment and control groups. The statistical analyses of pre-post achievement tests

207

revealed that the students in both groups showed progress from pretest to posttest but this progress was not significantly different between the treatment and control groups. It was also noted that the students' performance on pretest, posttest and retention test did not differ as to the group when their CGPA scores were controlled. In other words, the impact of critical thinking based instruction on the students' achievement was not different from that of the traditional instruction.

Concerning the CCTDI results, it can be concluded that although the critical thinking disposition of the students in both groups significantly increased within a semester, the CCTDI pretest and posttest mean scores of the students in both groups were not significantly different.

Besides these quantitative data, qualitative data obtained from the focus group interviews revealed the affirmative perceptions and impressions of the interviewed students from the treatment groups toward critical thinking based instruction because they perceived that critical thinking based instruction contributed to their development in terms of teaching skills, thinking skills, acquisition of content knowledge, and participation. While the interviewees from the control groups had also positive attitudes toward the traditional instruction, they did not diversify benefits of the traditional instruction and, even, reported some instructional problems such as being more teacher-centered, not having responsibility in their own learning, and lack of participation.

CHAPTER V

CONCLUSIONS AND IMPLICATIONS

The main purpose of this study was to evaluate the needs, design, implementation and outcomes of Development and Learning course enriched with critical thinking based instruction by using Stufflebeam's CIPP evaluation model. In the light of this purpose, the study was conducted in the Department of Accounting Teacher Education in the Faculty of Commerce and Tourism Education at Gazi University.

The study was shaped by four main research questions comprising subsidiary questions within self. These were (1) what aspects of Development and Learning course needed to be improved?, (2) how could the course be designed according to critical thinking based instruction in direction of meeting instructional needs of the students?, (3) how was the redesigned course being implemented from the students' points of view?, and (4) what was the impact of the redesigned course as compared to the existing one? In accordance with these questions, CIPP (Context, Input, Process and Product) evaluation model was fully implemented in the study because each question was respectively corresponding with a stage of the model. At the Context Evaluation stage, instructional needs of the students in relation to Development and Learning course were determined. At the Input Evaluation stage, critical thinking was integrated into the course as an instructional strategy in response to the identified instructional needs of the students by taking their needs and preferences and available resources of the faculty into account. It was assumed that this course enriched with critical thinking based instruction would not only ensure effective learning but also stimulate critical thinking. At the subsequent stage, Process Evaluation, the redesigned course was implemented and the students' reflections and reactions toward the course progress were evaluated. Finally, whether

the initial expectations for the enhancement of learning and critical thinking were realized or not were investigated.

For each stage, the study had a different research design composed of qualitative and/or quantitative methods. It was aimed that a variety of data collection tools would provide a variety of lenses on different aspect of the course and data compiled throughout these tools would shed light on the complexity of learning environment. In this regard, Darling-Hammond (2006) advocates that in order to gain different insights in relation to program outcomes of teacher education, different tools for evaluation should be used because educational contexts or settings are too complex within self to be uncovered by means of one tool.

In this chapter, findings revealed by these tools will be discussed parallel to the main research questions that the study aimed to enlighten under each stage of evaluation.

5.1. Context Evaluation

5.1.1. What Aspects of Development and Learning Course Needed to Be Improved?

At context evaluation stage, instructional needs regarding Development and Learning course were strived to be identified through interviews and needs assessment questionnaires. Interviews were administered to the vice chair of the Department of Accounting Teacher Education, to the instructor teaching pedagogical courses in the faculty and to a professor who is experienced in vocational teacher education and worked as an expert at MONE.

These interviews highlighted main needed points in teacher education. In this regard, the vice chair emphasized on the necessity of developing thinking skills of prospective teachers such as making comments and inferences and having different perspectives. Moreover, Professor and the instructor stressed the lack of teaching practice and applications that have to be ensured in any teacher education faculty in order to provide opportunities for students to put theories into practice. Actually, the problem of theory application into teaching life is also a main concern of educators who deal with especially Educational Psychology courses (Kiewra & Gubbels, 1997; Peterson et al., 1990).

Besides needs, the interview results underlined the goals of teacher education and the main objectives of Development and Learning course, which guided the redesign of the course. According to the interviewees, the goals of teacher education were;

- to train prospective teachers having subject and pedagogical knowledge and teaching skills,
- to educate them to be a good citizens with good personality characteristics with reference to the basic principles of the Republic, and
- to raise thinking students.

The main objectives of the course were;

- to understand the nature of knowledge as regards human development and learning and
- to understand how to apply the knowledge in teaching practice

In addition to interviews, two needs assessment questionnaires were administered to 321 sophomores, juniors and seniors in the department and to 28 graduates. They responded the items concerning all aspects of the course including objectives, content, teaching-learning process and assessment techniques/procedures. The results enlightened instructional needs, problems and preferences of the students that should be taken into account in the modification of the course.

Regarding the course objectives, it was revealed that the students and graduates think almost all objectives important. It was also noticed that they especially gave much more importance to the objectives in relation to putting theory into practice such as understanding students' differences, helping students' development, preparing appropriate learning environment, and applying what was learned to classroom environment. These results implied the necessity of not only including all the objectives but also covering their corresponding course content in the course. In this sense, the topics underlying the objectives were Development (Basic concepts regarding development, physical and psychomotor, cognitive, linguistic, moral and intellectual development), Learning (Basic concepts regarding learning, behaviorist and cognitivist approach to learning), and Motivation.

Although it was agreed in general that these objectives and content were of importance, the prospective teachers did not feel competent in the attainment of them, particularly of those based on theoretical knowledge about cognitive

211

development and linguistic development and necessitating higher order skills such as distinguishing related theories or determining similarities and differences. Their difficulty in attaining higher order skills might be a result of their prior education. It is known that the encouragement of thinking skills in school has been aspired recently in Turkish policies. On the other hand, direct instruction is still a nation-wide teaching method. This is a concern not just specific to Turkey; thus, the essentiality of the encouragement of HOTS before students arrive in colleges/universities has been strongly emphasized (Harrigan & Vincenti, 2004). Furthermore, the incompetencies might have stemmed from the inadequacy of the teaching-learning process of the course per se. In this point, the responses concerning teaching-learning process of the course uncovered that except for teacher-centered activities almost all activities/strategies given in the questionnaires were mostly considered effective for learning but rarely or never applied in the course. These results disclosing the gaps between the importance and attainment of the objectives and between the effectiveness and frequency of activities/strategies pointed out that an instructional course of action should be determined regarding the teaching-learning process.

Especially, as the importance of the objectives regarding *putting theory into practice* was shared by all stakeholders participated in the study (the instructor, the expert from MONE, the students, the graduates), their attainment by students gained much more value. However, there were a number of the students feeling incompetent in this skill, albeit being not very high. These findings unveiled the necessity of the activities aiming to improve this skill within the scope of this course. In this respect, it is stated that instead of direct teaching of theories, their application into teaching life should be emphasized through practical opportunities like case studies or case-based problems (Kiewra & Gubbels, 1997; Peterson et al., 1990). Actually, as claimed by Perkins and Salomon (1988), transfer of knowledge instead of inert knowledge via these opportunities is also of value for teaching thinking skills, which has been a prominent educational aspiration.

Besides, the responses with respect to the effectiveness of activities/strategies shed light on what else should be done in response to the instructional needs/gaps. The activities/strategies that were considered effective for promoting learning and thinking were "follow-up tests given at the end of each topic", "active classroom

participation", "activities toward developing creative thinking skills", "providing interaction between students and the instructor", "giving responsibilities to students in some activities", "group work", "student-centered activities", "drama", "relating topics with each other", and "doing comment on topic, case and phenomenon". These findings pointed out that the students and graduates believe in the necessity of the active learning activities, thinking skill based activities, interaction and participation in the classroom, and follow-up tests for effective instruction that would ensure meaningful learning and advance thinking skills. In fact, active learning and thinking skill based activities, which stimulate students intellectually, are important means to rise students' motivation and engagement and to allow deep understanding and construction of knowledge meaningfully by students (Cummins, 2006; Fisher, 2003). In addition, interaction and participation are accepted as two main determinants of creating a warm atmosphere required for the engagement of students in any given activity and so learning (Bloom, 1982). As for follow-up test, it is an essential tool for self-evaluation and feedback. These activities/strategies whose effectiveness has been supported by literature as well had been rarely appeared in the course. Therefore, they should have been taken into account in the planning of the teaching-learning process of the course.

Lastly, regarding the assessment techniques, multiple-choice objective test was mostly preferred for both midterm and final exam. Since various theories and topics are covered throughout this course, an essay exam might seem to be hard for them. According to the review of Struyven, Dochy, and Jahnssens (2005) about students' perceptions toward evaluation and assessment methods in higher education, multiple-choice test is more favorable methods compared to essay exam because of being easier, causing lower anxiety and higher success expectancy, and having lower complexity. Likewise, Messineo, Gaither, Bott, and Ritchey (2007) found out that experienced students who had completed at least one semester in college preferred multiple-choice exam. Because of these reasons, essay exam might have been the least preferred technique compared to multiple-choice test. Follow-up tests, classroom participation, and group project were the other mostly preferred alternatives.

In conclusion, this needs assessment study uncovered the deficiencies especially in relation to the teaching-learning process of the course and the

preferences of the students regarding the instruction of the course. Thus, the subsequent step should have been the redesign of the course for the purpose of closing these deficiencies by taking the preferences into account.

5.2. Input Evaluation

5.2.1. How Could the Course Be Designed According to Critical Thinking Based Instruction in the Direction of Meeting Instructional Needs of the Students?

The context evaluation stage of the study had disclosed the instructional problems, needs and preferences. At this input evaluation stage, the course was redesigned in light of these results so as to solve these problems and to meet the needs. It was presumed that this could be achieved through developing and changing instructional strategies. In this respect, research and literature, in general, support that teaching-learning activities and strategies toward promoting critical thinking skills could result in intended achievement (e.g., Eggen & Kauchak, 2001; Halonen et al., 2002; Nisbet, 1993; Rathset al., 1967).

Consequently, Development and Learning course was redesigned according to critical thinking based instruction by using Kemp, Morrison, and Ross's instructional design model. The context evaluation results led to determine the instructional objectives of the course. Accordingly, the main objectives of the course were "to understand the nature of knowledge regarding human development and learning" and "to understand how to apply the knowledge in teaching practice". The objectives listed in the needs assessment questionnaires had been perceived important by most of the students and graduates. Thus, these objectives were taken into account in constituting the instructional objectives of the course (see Appendix G). In order to identify the content, syllabuses and text books related to Development and Learning course were examined. Also, the students' preferences regarding the content were taken into consideration. According to the context evaluation results, an agreement on the importance of the objectives by the majority implied involving their corresponding course content in the course. In this manner, the outline of the course content was formed (see Table 39).

Teaching-learning process of the redesigned course was developed based on Eggen and Kauchak's (2001) Inductive Teaching Model, in which students are

214

engaged in critical thinking skills in order to achieve course objectives. Lesson plans were prepared according to this model including five phases: lesson introduction, the open-ended phase, the convergent phase, closure, and the application phase. Meanwhile, literature and the context evaluation results aid to specify teaching-learning activities and strategies. A variety of active learning strategies cultivating critical thinking skills was involved such as questioning, case studies, thinking skills activities (e.g., comparing and contrasting, decision-making, problem solving), puzzle, poster presentation, role playing, graphic organizers, article critique, and project (see Table 40). Students were also asked to compile all their in-and out-class documents and tasks in portfolio. Moreover, as for instructional materials, available resources in the faculty such as projector, OHD, video were determined in addition to handouts, worksheets, documents. Finally, for assessment of students' achievement, their portfolio, follow-up test results, classroom participation, and assignments were taken into account besides midterm and final exams.

5.3. Process Evaluation

5.3.1. How Well was the Redesigned Course Being Implemented from the Students' Points of View?

After being redesigned, the renewed course was implemented in the predetermined treatment groups; two of four sections of the Department of Accounting Teacher Education in 2006-2007 academic year. In order to respond how well the redesigned course was implemented from the students' points of view, the students' journals filled out each week by the students in these groups were analyzed. By means of content analysis, the collected 718 journals were analyzed and five themes were extracted from these journals: "effectiveness of the instruction on learning", "effectiveness of the instruction on thinking skills", "metacognitive skills to learn better", "difficulties/problems", and "instructional suggestions for better instruction".

The results revealed that according to the majority of the students, the course enriched with critical thinking based instruction facilitated learning, understanding, and using thinking skills as supported by literature (e.g., Beyer, 1988a; Johnson, 2000; Raths et al., 1967; Zohar & Dori, 2003). It was realized that active learning strategies/activities used in the course and learning environment were of great impact

on this result. Because according to the students, active learning strategies stimulating critical thinking such as questioning, group work, case study, and discussion aided them to understand topics better, to put theories into practice, to realize their deficiencies, to repeat and retain topics in addition to use thinking skills. Of these strategies, questioning has been already emphasized in order to promote thinking skills and to enhance learning (Paul, 1991). Likewise, especially from cognitivist learning approach, group works stimulating cooperation is preferred for ensuring better understanding and developing cognition (Beck & Kosnik, 2006; Johnson & Johnson, 1991; Woolfolk, 2004). Concerning case study and discussion, it is stated that these methods advance critical thinking skills, support the development of one's cognitive and affective domains and provide transfer of knowledge (i.e., putting theory into practice) and meaningful learning (McDade, 1995; Weston & Cranton, 1986). Peterson et al. (1990) also point out that particularly case studies are of importance for the transfer of theories into the real teaching life.

The students also reported that these strategies provided active participation and effective interaction, attracted their attention, and increased their motivation, which are indispensable prerequisites of upgrading learning and critical thinking. In this respect, it is asserted that questioning and discussion stimulates classroom interaction so as to invite, maintain, and foster students' thinking and learning (Costa, 1991c; Paul, 1991). This result signifies that the study fulfilled interaction among students and with teacher, which is one of teaching strategies suggested for provoking students' thinking (Paul et.al. 1989; Potts, 1994). It was also expressed that thereby, this course created a convenient, enjoyable, interactive and active learning environment in which they could speak easily, express their opinions freely, use their own wording, realize different views, and consider from different points of view. Likewise, in their study in which critical thinking skills were integrated into the advertising principle course, Celuch and Slama (1999) found out that the learning environment based on learning through thinking, group activities/interaction and exposure to different view points were perceived as strength of the course by students.

Besides these, the students stated their affirmative reflections peculiar to various activities carried out in the course such as spontaneous role playing, spontaneous presentation, a concept map, a small folklore show, and a silent movie.

216

Even though, the activities were mostly perceived effective in understanding and learning, there were a few students opposed to this view. Especially as the course progressed to the more complicated topics such as operant conditioning, their number increased a little bit. For difficult topics, preliminary studies and repetition are of importance in understanding; for this reason, graphic organizers and assignments were used in this study. Graphic organizer is a kind of semantic mapping and it aids forming meaningful relationship among basic facts, concepts and ideas in a text by categorizing, linking and organizing them and provides clear overview, easy memory and recall; thus, facilitates learning (Clarke, 1991; Lim et al., 2003). Therefore, their preliminarily use helps students to understand key concepts in a topic. It is not possible to say surely but it might be guessed that if these students neglected to do graphic organizers or assignments, they might have had problems in understanding.

Concerning the application of critical thinking skills, it was noticed that while the students mentioned whether they used thinking skills, they did not generally clarified how they did. It was derived from the given explanations that active learning strategies stimulated critical thinking skills of the students in various manners. It was elicited that questioning encouraged them to generate their own ideas and explore definitions, principles and implications of the theories on their own. Some students also specified that thinking based instruction made them to realize and to reason their own perspectives; thus, it might be said that confidence of these students in reasoning might have been promoted. Moreover, it was noted that reasoning their own views might have assisted the development of intellectual humility, which shortly means realizing limitations of his/her own views and knowledge (Paul et al., 1989; Paul & Elder, 2006).

Another remarkable result was that case study was the most thought provoking activity. Because, the students pointed out that by means of case studies they could relate the topics to the cases, put themselves into the place of persons or situation in the cases, analyze and reason the persons or situation deeply, find solutions, develop their own perspectives, explore implications and consequences, make inferences by considering their observations, and evaluate perspectives. These results are consistent with the McDade's (1995) claim that case studies foster critical thinking skills of students. This claim was also endorsed by high school teachers in

217

McEwen's (1994) study because among teaching methods, case study was ranked as the most effective methods for promoting critical thinking skills.

For some students, the topics per se and the given examples stimulated them to relate the topics to their observations, to question the examples in terms of accuracy, and to make implications toward teaching. Also, it was reported that by means of the examples and activities clarifying the theorists' views, they could compare views dialogically and detect similarities and differences. Besides, the findings once again displayed the importance of discussion and group works by which they could realize, evaluate, and question their own thoughts and the different perspectives through dialogs among themselves and could listen to each other critically. In sum, it can be inferred from the students' points of view that critical thinking based instruction had encouraged students to use thinking skill strategies through a variety of activities and teaching methods such as questioning, case studies and discussion.

According to the results, critical thinking based instruction brought the difficulties along with its contributions. For example, some students had difficulties in expressing their own opinions, in speaking and, so, in participating because of being reluctant and excited. Also, some had problems in understanding the topics such as cognitive development and classical and operant conditioning. That is, the way of teaching did not assist those students to comprehend these topics. Next, it was revealed that some students strained in comparing and contrasting views or theories such as Piaget' versus Vygotsky's views, operant conditioning versus classical conditioning, contructivism versus the other cognitivist learning theories and cognitivist versus behaviorist learning approach. Whereas most of the students indicated that they understood these topics and the abovementioned compare and contrast activities facilitated them to understand the topics better. According to the responses, one reason for having difficulty in these activities was not to recall the previous topics so as to compare or contrast was. Also, students whose thinking skill levels were low might have had difficulties in performing these tasks that require higher order thinking because comparing and contrasting are higher order thinking skills in comparison with recalling and comprehending (Brown, 2004; Quellmalz, 1985).

218

In addition to difficulties, the results revealed some students' complaints about a few problems that might have affected their achievement in the course. The problems they experienced were in relation to group adaptation at the beginning of the semester, assignments, being overloaded with hard courses at the same period of time, and inadequacy of the time for interpretations and for exchanging their ideas with their groups. Besides these complaints, there were some suggestions for better instruction although the students expressed mostly their satisfaction with the course progress. Notwithstanding the general satisfaction for the course progress, these suggestions along with the complaints were strived to be taken into account during the implementation of the redesigned course. In fact, some of these suggested strategies/activities, particularly those suggested in the first weeks (e.g., making repetition, giving assignments and projects, using visual materials), had been already planned in the design of the course and they were implemented in the subsequent weeks as it was planned. Except for these suggestions, regarding group work, they mostly expressed in the journals and conversations in the class that they wanted to be involved in group work but with group members they selected. In this regard, Beck and Kosnik (2006) also alleged that knowing each other in a community on which collaborative learning depends would affect the learners' trust to each other in terms of sharing their views and generating new ideas. Thereupon, they were allowed to form their own group. In addition, the students suggested the presentation of any topic or assignment by groups. Subsequently, this activity was carried out spontaneously for the personality development topic and they stated their satisfaction with this activity. Even though the inadequacy of time allotted for the course was pointed out, some students repeated their desire for a variety of activities such as puzzles, drama, debate, or more discussion in addition to the activities that are already used in the class. Yet, time limitation allowed carrying out only a few of them. Apart from these, another modification in the course progress was made on assignments. In the last weeks, the students started to complain about the assignments in the class and on the journals. Thereupon, anymore assignment was not given for the purpose of not affecting their motivation negatively and of having them to emphasize more on the project that they had to complete by the end of the semester. In addition to these, the most frequently expressed request was the use of visual materials/tools like photos, pictures, slides, CDs, tv, projector, posters, and etc.

Actually, these visual materials were used throughout the course but the results disclosed that students were so impressed by these visual materials, especially video, that this impression might have caused them to request these materials often.

In the journals, it was appeared that most of the students were aware of not only what inadequacies, difficulties, or problems affecting their learning were but also what they need to do to facilitate their own learning. Because they stated various strategies that they can use to improve their learning such as regular and planned studying; reading more; searching different sources; discussing or talking about the topics; repeating the topic or in-class activities; observing development of different age groups; transferring the topics or concepts into real life; looking at movies and photos in relation to topics; taking notes; participating into the class; being alert and active; listening carefully; and overcoming excitement. This awareness pointed at their metacognition, which is defined as having knowledge and understanding about one's own learning system, cognitive processes and making decision about how to act (Duell, 1986; Eggen & Kauchak, 1997; McCown & Roop, 1992; Ormrod, 2008; Slavin, 2003). While the students' responses signified their reflections on their own learning, they did not specify any attempt to apply these, whereas metacognition entails not only knowing but also applying effective strategies to learn (Ormrod, 2008).

5.4.   Product Evaluation

5.4.1.   What was the Impact of the Redesigned Course as Compared to the Existing One?

At the product evaluation stage, the outcomes of the pretest-posttest quasi experimental study were searched. Data were gathered through achievement tests, the CCTDI and focus-group interviews. The achievement test was administered to the students as pretest at the beginning of the semester, posttest at the end of the semester and retention test six weeks later while the CCTDI was applied only as pretest and posttest. In addition to these, focus group interviews were carried out with four groups of students; two from the treatment and two from the control groups. In total, 22 students participated in the interviews. Even though because of small sample size the interview results cannot be generalized to all students, these

were of value for the delineation of the learning environment created as a result of critical thinking based and traditional instruction.

Achievement test results revealed that there was no significant difference between the treatment and control groups at the pretest and posttest results when the students' CGPA scores were controlled in order to equalize the groups. It was found out that the students in all groups performed significantly better in posttest than pretest but the progress from pretest to posttest was similar between groups. Besides academic achievement, concerning the impact of the type of instruction on retention, it was observed that critical thinking based instruction did not have a significantly different effect on retention as compared to the traditional instruction when the CGPA scores were controlled. In this study, the retention test was given six weeks after the experimental study was over. If the retention test had been administered at a later time instead of six weeks or had been given once more, a difference between the groups might have been observed because the impact of critical thinking based instruction on retention may appear in a longer period of time. In this regard, Adey (1991) detected that the mean scores of the achievement test which was given a year after the earliest Cognitive Acceleration through Science Education (CASE) experiment in which thinking skills were incorporated into science curriculum, were significantly different between groups in contrast to the results of the achievement test administered immediately after the experiment.

In short, concerning the impact of critical thinking based instruction on the students' cognitive development in terms of learning and retention, it was revealed that critical thinking based instruction did affect neither the course achievement nor retention different from the traditional instruction according to the test results. Though insignificant difference on the achievement and retention test mean scores of the treatment and control groups contrasts with findings of a number of the related studies (e.g., Akınoğlu, 2001; Deniz, 2003; Kökdemir, 2003; Şahinel, 2001), there are some studies obtaining similar results (e.g., Adey, 1991; Reed, 1998; Reed & Kromrey, 2001; Solon, 2007). Even, negative outcomes of thinking based instruction on students' performance such as lower scores in treatment groups have been still discussed (Lohman, 1986; Woolfolk, 2004).

Pertaining to the current study, the use of activities enhancing learning in both groups might have affected the results, as observed in Reed's (1998, 2001) study.

221

She searched the impact of explicit teaching of Paul's critical thinking model in a U.S. History course in a community college on content knowledge and found that there was not significant difference between the treatment and control groups. She considers that this result was arisen from the use of activities facilitating deep learning in both groups. Indeed, this view is worth taking into account in the current study as well. Because in this study, while active learning activities/strategies stimulating critical thinking were used in the treatment groups, drama and follow-up tests, which are two effective tools for learning and retention, were used in the control groups. Indeed, Mixed Factorial ANCOVA results indicated that loss of knowledge from posttest to retention test was not significant for both groups; this result points out the effectiveness of teaching-learning methods in both groups on retention because, on the average, there was not a remarkable decrease in the content knowledge for the students in both groups.

The positive impact of drama on learning and retention has been also supported by related research (e.g., Andersen, 2002, 2004; Henry, 2000; McNaughton, 2004; Montgomerie & Ferguson, 1999; Morgan & Saxton, 1985). It is claimed that drama is of value in understanding and retaining knowledge, placing learning in meaningful contexts, engaging in realistic problems, and developing thinking skills and metacognition (Andersen, 2002; Henry, 2000).

Concerning weekly follow-up tests, Myers and Myers (2007) found that academic achievement of undergraduate students taking bi-weekly exams was higher than that of students taking hourly midterm exam because it is claimed that hourly midterm exams of particularly lecture based courses are not effective in learning and retention. Moreover, it is alleged that multiple assessment tools provide communication between teacher and students so that student can get feedback about their performance and adjust their study habits accordingly (Huba & Freed, 2000, as cited in Myers & Myers, 2007). Similarly, in the focus group interviews, the students in the control groups mostly emphasized the positive influences of follow-up tests on determining their own deficiencies, self-evaluation, repetition, and retention. For these reasons, drama and follow-up tests might be counted as effective means leading to academic achievement. Briefly, the impact of drama and follow-up tests on the enhancement of learning might have overshadowed the impact of critical thinking based instruction on the course achievement.

222

On the one hand, critical thinking based instruction is advocated for enhancing subject learning in addition to promoting critical thinking skills, on the other hand whether teaching critical thinking skills in a course content limits time required for gaining content knowledge or not has been argued and investigated (Adey, 1991; Reed, 1998; Reed & Kromrey, 2001; Solon, 2007). Similar to the current study, these researchers found out no difference between treatment and control groups in terms of content knowledge. In these studies, it is indicated that since a part of class time is left to tasks or activities regarding thinking skills, time to cover course content is less in treatment groups than control groups. For this reason, showing similar performance on achievement test in spite of having less time for content is interpreted as evidence showing that incorporating thinking skills into a subject matter does not hinder content learning (Adey, 1991; Reed, 1998; Reed & Kromrey, 2001; Solon, 2007). From this point of view, it can be concluded that critical thinking based instruction in Development and Learning course did not cause any sacrifice from content learning in comparison with the traditional instruction.

In a review study of Lohman (1986) about negative or *mathemathanic* (i.e. gives death to learning) effects of interventions for teaching thinking skills, he discusses whether previously acquired cognitive strategies will assist or interfere with attempts to acquire new ways of thinking and learning. He contends,

> If a student has already overlearned and thereby automated an organized system of production rules, then these rules will continue to execute automatically, in spite of the student's best efforts to suppress them and instead, attend to the new procedure that is being taught. (p.200)

He exemplifies that high achiever students already have effective learning strategies and new teaching interventions may disrupt their own way of learning. For this reason, he proposes to study the effect of the length of instruction because he thinks that the impact of intervention on students' performance may be different in a long term. Concerning the current study, although the students were actively involved in the given tasks, they may not have been adapted to critical thinking based instruction well and they might have continued to use their own ordinary learning strategies. Thus, they might have performed similar to those in the control groups. Whereas, if the instruction had been executed for a longer period of time than a

semester, the students might have adapted to the instruction as a result of more practice and its impact on learning might have been observed.

In addition to students' habit of cognitive strategies, their characteristics such as aptitude and learning style may not have been appropriate to the learning environment created by critical thinking based instruction in which written tasks were mostly used. Lohman (1986) states that a treatment might be obstructive for a kind of learner and points out that the performance of younger, less-able, and anxious students in an experimental study might be different from more-able, older, and less-anxious ones. As for the current study, the students' aptitudes and learning style and strategies were not taken into account. If critical thinking based instruction in Development and Learning course was designed so as to address the diversity of students, the students' performances on the post achievement and retention test might be different from the current situation.

Besides the achievement and retention test results, when the focus group interview results were examined in terms of the acquisition of the course topics by the students, it was realized that although a few of the interviewed students from the treatment group felt incompetent compared to those from the control, there were common topics that the students from both groups had difficulty in learning such as gestalt theory and operant conditioning. According to the incompetent students from the treatment groups, the reasons stemmed from not considering those topics important, not understanding how to use, not doing practice, confusing the theories, and having stress of final exam. For these students, it seems that critical thinking based instruction was not adequate in making the theories clear and comprehensible and in relating to reality or teaching life. Nevertheless, more students who perceived themselves competent reported the benefits of the instruction on learning. For them, the course instruction in which graphic organizers, assignments, in-class activities and case studies were used helped them to study and repeat the topics, to relate them to each other and reality, to do preliminary study, and to understand how to implement in teaching. For instance, the effectiveness of case studies in putting theories into practice was reflected in the interviews. Graphic organizers were perceived by a few students as a very beneficial tool for being prepared, reviewing and repeating the topic beforehand, and determining the points that were not understood. As for journals, a student stressed that they reviewed the course while

filling out the journals so that they could repeat the topics. Actually, similar results had been also obtained from the student journals.

The interviewed students from the control groups expressed similar reasons for feeling incompetent, which underlined instructional problems similar to those encountered in the treatment groups. Yet, in the control group case, since there were more students feeling incompetent, these problems might have been too powerful so as to interfere with students' learning. Regarding drama, most students indicated its positive impacts on their learning and retention because drama was a visualization of the theories that can be remembered easily later on, an example of relating theories to real life and a means of attracting students' attention by entertaining. On the other hand, some who strongly disagreed with these views mentioned problems they encountered; for them, drama did contribute to nothing other than entertaining as students focused on making laugh rather than understanding the theory and adapting it to drama. Even, a student confessed that she had not read the topic for which they performed drama. Another problem was that not all members of drama groups were actively involved. One reason for perceiving drama not effective in learning might be that drama requiring higher order thinking might not have been a good learning method for students with lower order thinking level. Students' learning style differences might be another factor because for receptive or auditory students, it might be a drawback in learning.

In addition to the problems in relation to drama, lack of participation in the control groups might be another instructional problem affecting the acquisition of course content. It is accepted that active participation has an essential role in learning and should be ensured for an effective learning environment (Carini, Kuh, & Klein, 2006; Pratton & Hales, 1986). However, the interview results illuminated that the only way of participation for the interviewed students in the control groups was generally to take a role in drama and to answer a question when they were called on. Inactive classroom environment in the control groups might have lessened their motivation and obstructed their involvement in their own learning. Thus, this might have caused more students from the control groups to perceive themselves incompetent in the acquisition of topics in comparison with those from the treatment groups. Because, as to the responses given in the student journals' and focus group interviews, critical thinking based instruction provided an active and attractive

225

learning environment whereby students were mostly involved and engaged in a variety of activities. In this regard, it has been already stated that in an intellectually stimulating learning environment, students' motivation increases and they tend to participate in class more (Fisher, 2003).

Concerning the impact of critical thinking based instruction on critical thinking, in this study, it was aimed to stimulate the students' critical thinking skills and their dispositions toward critical thinking in the treatment groups because it is asserted that critical thinking possesses skill and disposition dimensions (Facione, 1990; Kuhn, 1999). In this regard, Halpern (1999), who strongly supports teaching critical thinking across various disciplines at college level, claims, "it is not enough to teach college students the skills of critical thinking if they are not inclined to use them. Critical thinking is more than the successful use of the right skill in an appropriate context. It is also an attitude or disposition to recognize when a skill is needed and the willingness to exert the mental effort needed to apply it (p.72)". In this study, while the effects of the instruction on the encouragement of critical thinking skills were qualitatively revealed in the journals and interviews, the impact on the students' dispositions was investigated quantitatively by using the CCTDI, which is a scale developed for measuring critical thinking dispositions. The results pointed out that the disposition of students toward critical thinking in both groups increased significantly in a semester but the progress in the treatment groups was not different from the control groups as to the mean scores on the pretest and posttest. Similarly, in his study and in his later publication, Reed (1998) and Reed and Kromrey (2001) also examined the influence of explicit teaching of Paul's critical thinking model on the CCTDI and did not find difference between the treatment and control groups. Yet, they did not observed significant progress between the CCTDI pre and posttest mean scores of the students in the treatment group, either. Compared to the finding of Reed's studies, it would not be wrong to deduce that, critical thinking based instruction in Development and Learning course had a better impact on the students' dispositions.

Nevertheless, there are studies whose findings are not coherent with the current study. Miri, David, and Uri (2007) found out that the use of teaching strategies fostering higher order thinking skills throughout an academic year promoted the critical thinking dispositions of high school science students

considerably because the CCTDI scores were significantly different from that of the control groups. If the current study had been carried out for a year as it is in Miri et al.'s (2007) study, the CCTDI mean scores of the treatment and control groups might have been different because it is accepted that critical thinking skill is a complex skill which cannot be gained in a short time so it entails time, effort, and practice (Van Gelder, 2005). For this reason, one academic semester would not have been adequate to attain critical thinking skills and dispositions so as to create a significant difference between groups. Kuhn (1999) and Van Gelder (2005) also points out the necessity of understanding theory of critical thinking for practicing and acquiring critical thinking skills. Therefore, they suggest instructors to ensure the development of theoretical understanding as a complementary to practice of critical thinking. As to this point of view, since content coverage and critical thinking practices in the current study did not allow time for theoretical support regarding critical thinking, this might have hindered the remarkable development of critical thinking dispositions.

Despite the improvement of the students' critical thinking disposition in both groups from pretest to posttest, it should be noted that the CCTDI mean score of the students was still low (less than 240) according to the criteria given by Kökdemir (2003). This might stem from the profile of students in the faculty to which only graduates of Commerce and Tourism Vocational Secondary School can enroll. Unfortunately, because of the restrictions in the entrance to universities, which impede vocational high school graduates to freely choose a department or university they wish to go, vocational high schools have been generally preferred by families especially in case that their children are low achiever students. Concerning the characteristics of students, Kuhn (1999) draws attention to the community where they live. From situated-cognition perspective which defines thinking skills as social practices exercised and shared within a community, she argues that a person's disposition is shaped by his/her beliefs and values of which he/she is convinced in a community; and thus, she stresses the power of social practice and culture on thinking and behaviors. Likewise, Pithers and Soden (2000) and Halx and Reybold (2005) also contend that the characteristics of culture and context such as cultural taboos and sensitiveness toward thinking critically are two effective factors for the development and application of critical thinking. If critical thinking has not been

227

encouraged in communities where students live, expecting notable development in students' thinking skills may not be reasonable. As for the current study, thought provoking environments have been often encountered neither in Turkish education system especially in vocational secondary education system nor in family life, which are two main communities students pass through throughout their life till university; thus, this situation can be accepted as a factor explaining low level of critical thinking disposition of the students. Yet, this perspective entails further research regarding students who enter universities with underdeveloped ability to think critically, particularly in vocational higher education institutions.

Besides these, low level of disposition means that these students do not have a tendency to use critical thinking skills. This result poses a question of whether low critical thinking disposition impedes the development of critical thinking skills and so causes low critical thinkers because it is contended that if a person does not have an inclination to use critical thinking skills, he/she will not use these skills and will not be a good critical thinker (Facione, 1990). This is an important question to be searched because in that case, the claim that low critical thinkers are less likely to improve their critical thinking (Williams & Stockdale, 2003) would clarify why the CCTDI posttest mean score of the students in the treatment groups was still at low level although it progressed.

Furthermore, the instrument itself could be a source of these results. Unfortunately, in Turkey, there is not any standardized comprehensive scale developed specific to critical thinking skills. A few researchers endeavored to develop it by themselves (Semerci, 1999; 2000) or adapted scales originating from west countries, especially from U.S.A. into Turkish version (Evcen, 2002; Kökdemir, 2003). Evcen (2002) adapted Watson-Glaser Critical Thinking Appraisal into Turkish version, but she found low reliability coefficient; .46 for the whole test and .29 to .53 for the subtests. Compared to Evcen (2002), Kökdemir (2003) found higher reliability coefficients (.88 for the whole test and .61 to .78 for the subtests) after adapting the CCTDI, which was used in this study. However, this adaptation study resulted in less number items than those in the original form. Some of the items translated into Turkish are not clear enough to be understood. Therefore, the adequacy of these adapted tools is open to discuss.

Aside from the CCTDI results, the focus group interviews revealed that critical thinking based instruction was perceived influential on the use of critical thinking skills by the interviewed students as presupposed in designing this course. The students' expressions in the interviews similar to those in the journals highlighted that activities/strategies used in the course stimulated them to use various critical thinking skills such as thinking strategically in a short time in order to reach a reasonable conclusion, making relationships to topics, noting differences, exploring perspectives, evaluating their own reasoning, realizing other's opinions, making comments, defending a view, evaluating theories, and considering from different points of view. According to the responses, the activities/strategies arousing these skills were case studies, thinking skills worksheets like compare and contrast, individual or group activities, graphic organizers, journals, article critique and project. As a result, it was revealed that these activities served their presumed purpose which was to promote thinking skills. Similarly, in order to advance critical thinking skills, Burbach et al. (2004) used active learning strategies in an introductory leadership course such as journal writing, service learning, group works, case studies, and questions and they ascertained significant gain scores of the students on a scale measuring critical thinking skills (W-GCTA).

In addition, the interviewed students pointed out the impact of the course on teaching skills. The students in both groups stated similar contributions of the course to their personal and professional development in terms of teaching profession but those in the treatment groups made much more clarification and mentioned additional benefits of the course. Concerning the contributions to professional development, it was explained that the course helped them to have knowledge about development and learning; to understand students' behaviors and needs; to learn how to teach, what to teach, how to behave and to communicate and what to do regarding problems. Some students from the treatment groups also pointed out that through this course they gained the consciousness of being a teacher and experienced different activities that they would apply in their own class when they become a teacher. Exactly this result that they might encourage critical thinking skills in their own classroom renders critical thinking based instruction important for teacher education (Critical Thinking Skills and Teacher Education, 1988; Paul et al., 1997). Additionally, being able to express their own opinions, to improve self-confidence

and to speak in front of people were the mostly expressed benefits of the course in terms of the personal development of the interviewed students in both groups. For these students, especially drama in the control groups and activities and strategies in the treatment groups were effective means to this end.

As a result of critical thinking based instruction, it was observed that the students who were interviewed mostly had positive attitudes toward the course even though some negative aspects were expressed. These students were pleased to have encountered such a learning environment and wished to have had such an environment in other courses. They were also so satisfied with the course progress that they were happy to be in the treatment group rather than the control group. Because of its contributions, even two students from the control groups stated that they would like to have been in the treatment groups. As to the results, underlying reasons for having positive attitudes toward the course enriched with critical thinking can shortly be listed as attractive, interesting, enjoyable and comfortable learning environment; thought provoking atmosphere; increased attendance; active participation; better communication and interaction; and effectiveness on retention. These positive attitudes had been reported in the journals, as well. Likewise, Aybek (2006), in her study, also observed that while, at the beginning, students had negative attitudes toward critical thinking based instruction of a course content, it then turned out to be a positive attitude because they realized its impact on learning and understanding subject matter.

Nonetheless, there were complaints in the interviews regarding the intensity of the course with various activities and assignments given each week, although no assignment was given in the last weeks based upon the similar complaints on the journals and in the class. Not having encountered such a student-centered and thinking based environment and not having experiencing active learning activities before may cause them to feel tired or bored of activities and assignments (Harrigan & Vincenti, 2004). In experimental studies, such reactions toward active learning environment have been encountered. For instance, in Struyven's (2005) study, she found out that students in treatment group where active teaching methods were implemented in the instruction of Child Development course yielded more negative attitudes towards such active learning environment in comparison with traditional lecture based instruction. In the interviews, the students also expressed that they were

taking this course together with hard subject courses at the same academic semester; thus, this situation might have forced and exhausted them and lessened their motivation.

As for the traditional instruction, nearly half of the students in the interviews consider the course effective because of its comfortable and enjoyable learning environment and teacher-student interaction. On the other hand, the others mentioned that the course was more teacher-centered, there was not active participation other than drama and any responsibility for learning was not given to them. In- and-out class intensity of the treatment groups might have caused them to feel as if they were doing nothing more than drama. These problems led them to suggest various methods. Interestingly, these were the activities/strategies that were already used in the treatment groups. Cruickshank et al. (1995) state that the use of variety that is reflected in teacher's behaviors, instructional activities and materials, classroom organization, or interaction increase motivation, attention, participation and so learning. If these students' attitudes are taken into account from this point of view, lesser engagement and motivation on account of not having a variety except for drama and follow-up test might have resulted in such negative attitudes.

Concisely, the product evaluation of critical thinking based instruction displayed that the instruction enriched with critical thinking based activities/strategies did not affect the students' performance on the course achievement, retention and critical thinking disposition different from the traditional instruction. Furthermore, both the journals and the focus group interviews pointed out that from the students' points of view, this instruction generally resulted in affirmative impressions on their understanding, teaching skills, thinking skills, participation, and attitudes toward the instruction. Indeed, the main goal of this evaluation study was to improve the instruction of Development and Learning course. Even though quantitative data did not reveal a significant achievement in the content knowledge and critical thinking disposition, qualitative outcomes of critical thinking based instruction on the enhancement of understanding, retention, and students' thinking skills cannot be ignored. In other words, its impact on the students' affective development should be taken into account. Actually, critical thinking based instruction may display its impact on achievement and critical thinking skills with continuous studies and in a more extended time because it is

231

stressed that with continuous practice in a longer period of time and hard study, students will show higher achievement and intended results will be reached (Kirkwood 2000; Lohman, 1986).

5.5.   Implications for Practice

It is expected that the findings of this study would lead instructors and educators, especially in teacher education faculties but without being only specific to them, to incorporate critical thinking into their courses. Although quantitative results did not reveal the impact of critical thinking based instruction on learning and critical thinking disposition in a vocational teacher education faculty, the perceptions of the students toward the instruction derived from qualitative data addressed the noteworthy effects of critical thinking based instruction on understanding, critical thinking, teaching skills, or attitudes; i.e., on process. In order to observe the real impact of the instruction, its implementation at different level and settings should be encouraged. Therefore, it is hoped that such studies would provide incentive to integrate thinking skills into existing educational programs or curricula or to design new courses peculiar to teaching thinking skills.

Additionally, this study was a very comprehensive evaluation study including needs assessment and evaluation of course design and implementation. Therefore, the design of the study would guide evaluators and educators who would like to follow similar way in their evaluation studies. Shortly, in this section, the implications of the study for practice will be discussed.

1. This study results derived from the student journals and focus group interviews imply that prospective teachers generally perceived critical thinking based instruction effective for understanding and critical thinking even though its effects were not reflected on academic achievement and critical thinking disposition. Not quantitative but qualitative improvements in the course entails wider application of critical thinking into instruction in other teacher education faculties but also in other faculties, even, in elementary and secondary education. Moreover, these results might be specific to this vocational teacher education faculty; therefore, if critical thinking based instruction is implemented in other settings, valuable information would be obtained for practice and further research. Even if integrating thinking skills is not possible, a separate course for teaching thinking skills should be

232

supported. Results of this kind of applications would enlighten the way of improving such courses so as to reach intended results.

2. One of the reason for not finding significant differences between the treatment and control groups on both achievement and critical thinking disposition might arisen from students' prior educational life which does not support thinking. Thus, dissemination of critical thinking based instruction to various courses in a faculty and to all level of schooling should be encouraged.

3. If raising thinking students at every level of schooling has been an educational aspiration recently in Turkey, education system should educate teachers who are able to use various thinking skills. This goal can be achieved only if thinking skills become an indispensable part of teacher education. Thus, teaching thinking skills as a separate course or as embedded in an ongoing course should be promoted. In this respect, this study showed that the integration of critical thinking skills into Development and Learning course did not contribute to prospective teachers' critical thinking skills and dispositions different from the traditional instruction. However, it is accepted that improvements in critical thinking requires more time and practice. Therefore, critical thinking based instruction should not stand peculiar to a pedagogical course; it should be incorporated into other pedagogical courses and subject courses.

4. Critical thinking based instruction entails a variety of activities, especially reading and writing exercises, through which inert potential for thinking would emerge. According to experiences and results encountered in this study, these activities should be planned and prepared carefully. As well as preparing activities, engaging students in activities is of importance because thereby these activities would serve their intended purposes. That is, designing a course based on more student involvement would contribute to the development of higher order skills. An effective way of students' participation is to create a democratic and comfortable learning environment. Thus, instead of forcing students to participate, such environment should be provided so that students might be motivated to be involved in class. While carrying out in-class activities, group work might be recommended because in group works, students practice various critical thinking skills such as realizing different views, yielding creative opinions, looking at from different perspectives, and noting their own deficiencies. Whatever activity is used, instructors

233

should give feedbacks to students about their performances because feedbacks enlighten the way that they could regulate their thinking skills and learning.

5. Because of the abovementioned responsibilities, instructors of these courses should have adequate knowledge about critical thinking and how to foster it. In this respect, their knowledge, attitudes and belief should be taken into account because these issues will affect their way of instruction and thus students' learning. Primarily, the presumption that teaching any content or subject matter already promotes critical thinking should be demolished (Harrigan & Vincenti, 2004). Also, teachers should know which thinking skills/strategies they teach, how to teach, how to engage students in tasks that require thinking skills, how to determine and deal with students' reasoning difficulties, how to initiate and guide students' inquiry and problem-solving, and how to use alternative assessment techniques (Zohar & Schwartzer, 2005). In studies in relation to teachers' pedagogical knowledge (Zohar, 2006; Zohar & Schwartzer, 2005), it was highlighted that a one-year professional development course aiming to assist teacher in integrating thinking skills activities into science instruction caused significant improvements in the pedagogy of science teachers attending this course. This implies that for teaching critical thinking skills or other thinking skills, an in-service training for teachers/instructor should be encouraged and provided so that consciousness should be ensured among them.

6. In thinking based instruction, the load and responsibilities of instructors would increase in comparison with traditional instruction. They should plan lessons very carefully, prepare activities stimulating thinking, encourage students to think in the class, ensure engagement of students in activities and create thought provoking and questioning learning environment. Therefore, their training in this respect is of importance for the fulfillment of these responsibilities.

7. Transfer of knowledge and implementation of instructional methods/strategies gained through this training into classroom settings may differ and these variations may result in inconsistencies between means and end. As a precaution, cooperation among instructors/teachers would ensure more effective application of these methods. This would also provide interdisciplinary connections, which is desired for practicing critical thinking skills in various fields.

8. This study revealed that case study, discussion, and questioning were perceived very effective methods for learning and stimulating critical thinking.

Therefore, the use of these methods can be encouraged. Instructors/teachers can prepare case studies in relation to subject under study but a special attention should be given in relating cases to reality and teaching life. In this way, students can put theories into practice. As for discussion and questioning, instructors/teachers should pay attention to control and guide the flow of topic.

9. This study results showed that if a variety of activities/strategies will be used in a course, that course should be designed very carefully. In this respect, one can benefit from Kemp et al.'s instructional design model and Eggen and Kauchak's teaching model used in this study. Besides the design of a course, all activities, even alternative activities, hand-outs, worksheets, assessment tools, etc. should be prepared in advance.

10. All efforts in a critical thinking based instruction require time, which was a main obstacle in this study. In order to overcome this problem, topics to be covered within a semester should be narrowed and class size should be lessened. In the current teacher education faculties, unfortunately, the number of students in a class is too high to implement any kind of innovation properly. For this reason, in this study, with the permission of the faculty administration, a usual section was divided into two groups and classroom size was decreased to nearly 40 instead of 80. Otherwise, such an experimental study could not be realized and critical thinking based instruction could not be implemented appropriately.

11. Such instruction loads students more responsibilities as well as instructors. In order not encounter or prevent students' reactions as seen in this study, it would be better to ensure the attainment of self-regulation and metacognitive strategies prior to critical thinking based instruction.

12. If a new innovation is implemented in a course, students' reflections toward course progress should not be ignored. This study showed that student journals are effective means for this purpose.

13. This study was carried out within a semester. However, as to the analyses of quantitative data obtained from the tests, there was not impact of critical thinking based instruction on achievement and critical thinking disposition in comparison with the traditional instruction. Yet, in the interviews, affirmative outcomes, perceptions and impressions were expressed. Thus, in order to observe actual impact of endeavors regarding teaching thinking skills, these efforts should be lasted for a

long period of time especially if a complicated thinking skill such as critical thinking is the matter in hand. Because such skills may not be gained within a short period of time like a semester. Thus, such courses should not be implemented only once; they should be carried out continuously and opportunities for practicing thinking skills should be given in a variety of educational setting.

14. Although full implementation of CIPP model has not been encountered often in literature because of its comprehensiveness, this study showed that full implementation of the model provides more useful information concerning the improvement of a course/program. At the Context evaluation stage, needs assessment revealed instructional needs and provided a ground for designing the course. The Input evaluation ensured the systematic design of the course based on literature and document analysis. If learning is a process, neglecting the evaluation of that process and focusing on product would mislead an educator. One should notice how a new strategy/method/innovation is implemented. The current study displayed the importance of the Process evaluation in uncovering students' reactions and impressions. Finally, the Product evaluation gained more meaning after carrying out the previous stages. For these reasons, full model implementation should be encouraged even though it is not laid down as a condition to implement this model.

15. Needs assessment, which was conducted at the Context evaluation stage of the study, is generally ignored in research and studies in relation to course design and development. Whereas, as stated by Ornstein and Hunkins (1998), needs assessment is an integral part of planning, designing and evaluating a curriculum or a program, and it has contributions to curricular renewal if it is conducted continuously. In order to put theories in relation to needs assessment into practice, educators should be stimulated to assess needs prior to or as a part of curriculum design, development and evaluation studies.

16. The process evaluation stage of the study uncover a fact that when especially new approach is implemented, there is always a possibility causing implementer to attempt to take new actions. In the current study, for instance, students' reactions toward assignment and course load caused researcher to do some revisions such as cancelling assignments later on. In order to make modifications and take precautions in time, implementers should be alerted. In this regard, this study showed that process evaluation is a way of determining what to do and why to do.

Thus, in any evaluation and implementation studies, process evaluation should be carried out in order to ensure the improvement of the program/course/strategy/ approach under study.

17. This study exhibited the improvement of Development and Learning course as a result of the evaluation of each step of the course development. That is, the study attained its primary aim which is to improve the course in order to raise the quality of the instruction. Thus, as a way leading to improvement, evaluation studies should be conducted systematically for all programs and at every level of schooling.

5.6.   Implications for Further Research

In the light of this study, several implications for future research will be discussed in order to assist researchers intending to conduct similar studies and to draw their attention to points that they should pay attention while carrying out their study.

1. Although CIPP model was fully carried out in this study, it can be used in a broader context by a team as a project such as evaluation of teacher education programs or all pedagogical courses in the faculty or in other faculties. In the current study, some factors could not be taken into account because of time limitation and being out of scope. For example, at the Context evaluation stage, stakeholders such as parents and principles could not be involved. At this stage, various needs were identified but only those related to instructional needs and course objectives were taken into consideration. With a team-based project, more comprehensive implementation of the model would uncover more sound and beneficial information.

2. Overall research design of this evaluation study including different types of research designs within self such as case study, survey and experimental study at every stage of the CIPP model can be a framework for researchers, educators or instructors who would like to undertake similar evaluation studies by using CIPP model.

3. The use of mixed designs composed of both qualitative and quantitative methods showed how complementary to each other these methods are. On the one hand, quantitative data render statistical analysis possible; on the other hand, qualitative data gathered via interviews and student journals yielded information regarding students' reflections, reactions, opinions and attitudes that cannot be

obtained through any quantitative methods. This implies that mixed designs should be encouraged in future research. Besides, in this study there was not any observation whereas observation in the classes could have provided more rich description of learning environment created by the thinking based instruction. Thus, in future research, in addition to interviews, observation can be used as a data collection method.

4. The use of multiple methods contributed to the richness of the study. Even though the results obtained from qualitative and quantitative methods contradicted with each other, use of both methods address the inadequacy of one method in delineating a learning environment and revealing outcomes. Because in the present study, qualitative tools uncovered the impact of the course which could not be observed on the quantitative tools because of their differences on the focus. Therefore, the use of a variety of data collection tools and research methods has to be encouraged in any study.

5. At the Product evaluation stage of the model, pre-posttest quasi experimental design was applied so that effectiveness of critical thinking based instruction was ascertained by comparing the treatment groups with the control groups. In this regard, this study showed the usability of experimental designs in evaluating the implementation of a new course, program, strategy, innovations or approach.

6. Controlling external variables is an important aspect of any experimental study because of being thread to internal validity. As for this study, the students could not be assigned into the groups randomly. Therefore, CGPA was used as a covariate in statistical analysis in order to provide equivalence between groups in terms of academic achievement. However, students' demographic and cultural characteristics and learning styles/strategies could have been also taken into account. In addition to students' achievement, demographic and cultural characteristics and learning styles/strategies can be controlled in future studies. Moreover, researcher may consider examining the effects of gender, age, cultural and learning style differences on achievement and critical thinking in critical thinking based instruction.

7. Concerning students' learning style, it is asserted that in teaching thinking skills, prior learning habits may interfere with using newly taught skills and thus the impact of new strategies may not be observed in a short time (Lohman, 1986).

238

Therefore, a further research about the impact of students' previous cognitive strategies on a teaching thinking skills would reveal very valuable information.

8. In terms of cultural differences, it is claimed that whether a student is encouraged to think critically in his/her community such as family or school affects student's disposition to use critical thinking skills. In this study, critical thinking disposition of the students did not change between the groups. In this result, their cultural features might have been effective. Thus, further research may focus on the impact of culture on the development of critical thinking skills and dispositions.

9. The study showed that there was no significant difference on the post achievement test, retention test, and the CCTDI mean scores between the treatment and control groups. The instruction may be implemented for a longer period of time than a semester and whether the impact of the instruction on achievement, retention and critical thinking disposition depends on time or not can be searched. In this respect, another issue that is open to question is whether effects of the instruction continue over time or not.

10. This study was undertaken for Development and Learning course; thus, the results were pertaining to this course and to the faculty. Since this study was the first empirical study in which critical thinking based instruction was implemented in this course in this faculty, a replication study in this and other teacher education faculties should be conducted. Additionally, outcomes of the instruction in other disciplines, subjects or topics at different grade level can be investigated. Such a study would also display the extent to which the instruction can be implemented effectively. In addition, incorporation of different thinking skills apart from critical thinking into courses and its impact on learning can be studied.

11. As a follow-up study, the retention test was administered to the students in this study six weeks after the experiment but difference between treatment and control groups was not significant. In critical thinking based instruction, this period might be short to reveal the impact on retention; therefore this test can be administered later than six weeks or given twice in order to test whether its impact is limited to testing time or not. In addition, a more comprehensive follow-up study can be conducted. Besides a retention test, interview or observation can be used. Additionally, a project in which critical thinking based instruction can be undertaken

at various grade levels of a cohort in a school. Such a longitudinal study would expose contributions of the instruction in the long run.

12. A comparative study might be conducted in order to compare different approaches to teaching critical thinking. In this study, the infusion approach was used and critical thinking skills were embedded in Development and Learning course. A comparison of this study results with those obtained from a study in which the skill or direct approach is applied may reveal the effectiveness of these approaches.

13. Another comparative study might be carried out among teacher education faculties. In this study, finding no differences between treatment and control groups in terms of achievement, retention, and critical thinking disposition might be specific to the profile of the Faculty of Commerce and Tourism Education. A comparative study is required in order to ascertain whether this is a case peculiar to this faculty and what would happen in other teacher education faculties different from or similar to this faculty.

14. Teaching critical thinking in schools would provide opportunities for students to practice critical thinking skills in an education environment. Nonetheless, the use of critical thinking skills may differ in real life, especially if transfer of critical thinking skills into real life is not stimulated in schools. This necessitates further research to examine differences between critical thinking skills in daily life and those specific to subject or discipline.

15. There is not any scale developed specific to critical thinking skills in Turkey except for studies adapting U.S.A. originated tools to Turkish version. For this reason, for measuring critical thinking skills accurately and precisely, a Turkish scale should be developed by taking cultural and language factors into account.

16. Generic critical thinking skills can be measured via these scales. Nevertheless, domain specific critical thinking skills can only be measured by means of tools developed pertaining to subject matter. In this regard, this is a challenge for instructors/teachers to develop a critical thinking scale for their own subject and even to develop achievement tests necessitating using critical thinking skills.

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APPENDIX A

NEEDS ASSESSMENT QUESTIONNAIRE FOR STUDENTS

Sevgili öğrenciler,

Bu anket, G.Ü. Ticaret ve Turizm Eğitim Fakültesi'nde okutulan "Gelişim ve Öğrenme" dersi ile ilgili temel ihtiyaç ve beklentilerin saptanması amacı ile hazırlanmıştır. Anketten elde edilecek bilgiler, bu dersin geliştirilmesine yönelik olarak yürütülecek çalışma için kullanılacaktır. Lütfen ilgili maddeleri dikkatle inceleyerek verilen boşluk veya kutucuklara yanıtınızı yazınız/işaretleyiniz. Ankete adınızı yazmanız gerekmemektedir. Toplanan bilgiler yukarıda belirtilen amaç dışında kullanılmayacaktır.

Katkılarınızdan dolayı teşekkür ederim.
Öğr.Gör.Banu Yücel Toy

I. GENEL BİLGİLER

1. Cinsiyet: ☐ Kız ☐ Erkek 2. Yaş:

3. Bölüm: 4. Sınıf:

5. Gelişim ve Öğrenme dersinden aldığınız not ne idi?

☐ AA ☐ BA ☐ BB ☐ CB ☐ CC

☐ DC ☐ DD ☐ FD ☐ FF

6. Size göre, "Gelişim ve Öğrenme" dersinde başarılı olmak ne için önemlidir? Cevabınızı aşağıdaki ifadeleri inceleyerek **en önemliden en az önemliye** doğru sıralayınız (Rakam kullanabilirsiniz, 1.,2.,3.,.......,7.,8., gibi).

(   ) Gelişim ve Öğrenme dersinden geçebilmek için

(   ) Bölümden mezun olabilmek için

(   ) KPSS sınavında başarılı olabilmek için

(   ) Öğrencilerin gelişimlerini ve davranışlarının nedenlerini anlayabilmek için

(   ) Gelişim ve Öğrenme konularında temel bilgileri öğrenebilmek için

(   ) Öğretim etkinliklerini öğrenci gelişimine uygun olarak planlayabilmek

(   ) Öğretmenlik mesleğinde etkili bir öğretim ortamı sağlayabilmek için

(   ) Diğer (Lütfen belirtiniz) ....

II. DERSİN HEDEFLERİ ve İÇERİĞİ

Aşağıda "Gelişim ve Öğrenme" dersi ile ilgili ifadeler verilmiştir. Bu ifadelerde yer alan **kazanımlardan hangisinin önemli** olduğunu ve hangisini **ne derecede kazanmış** olduğunuzu ölçek üzerinde ilgili kutucuğa √ işareti koyarak belirtiniz.

	Bir öğretmen adayı olarak aşağıda verilen kazanımlar sizce **ne derece önemlidir?**						Verilen kazanımların her birinde kendinizi **ne derece yeterli** görüyorsunuz?					
	Önemsiz	Az önemli	Kararsızım	Önemli	Çok önemli	Fikrim yok	Yetersiz	Az yeterli	Kararsızım	Yeterli	Çok yeterli	Fikrim yok
	1	2	3	4	5	FY	1	2	3	4	5	FY
GELİŞİM VE ÖĞRENME İLE İLGİLİ TEMEL KAVRAMLAR İLE İLGİLİ HEDEFLER	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨
1. Gelişim ile ilgili temel kavramlar bilgisi												
2. Öğrenme ile ilgili temel kavramlar bilgisi												
GELİŞİM KURAMLARI İLE İLGİLİ HEDEFLER	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨
3.Fiziksel ve devinsel (psiko-motor) gelişim süreçleri bilgisi												
4.Öğrencilerin fiziksel ve devinsel gelişim süreçlerini takip edebilme												
5. Öğrencilerin fiziksel gelişimlerindeki bireysel farklılıkları anlayabilme												
6.Öğrencilerin fiziksel ve devinsel gelişimlerine yardımcı olabilme												
7.Öğrencilerin fiziksel ve devinsel gelişim düzeylerini geliştirmeye yönelik öğretme ve öğrenme ortamı hazırlayabilme												
8.Bilişsel gelişim süreçleri bilgisi												
9.Bilişsel gelişim süreçleri ile ilgili farklı kuramları anlayabilme												
10.Bilişsel gelişim süreçleri ile ilgili farklı kuramları karşılaştırabilme												
11.Öğrencilerin bilişsel gelişim süreçlerini takip edebilme												
12. Öğrencilerin bilişsel gelişimlerindeki bireysel farklılıkları anlayabilme												
13.Öğrencilerin bilişsel gelişimlerine yardımcı olabilme												
14.Öğrencilerin bilişsel gelişim düzeylerini geliştirmeye yönelik öğrenme-öğretme ortamı hazırlayabilme												
15. Dil gelişimi süreçleri bilgisi												
16.Dil gelişimi ile ilgili farklı yaklaşımları anlayabilme												

264

	Bir öğretmen adayı olarak aşağıda verilen kazanımlar sizce **ne derece önemlidir?**						Verilen kazanımların her birinde kendinizi **ne derece yeterli** görüyorsunuz?					
	Önemsiz	Az önemli	Kararsızım	Önemli	Çok önemli	Fikrim yok	Yetersiz	Az yeterli	Kararsızım	Yeterli	Çok yeterli	Fikrim yok
	1	2	3	4	5	FY	1	2	3	4	5	FY
17.Öğrencilerin dil gelişim süreçlerini takip edebilme												
18.Öğrencilerin dil gelişimlerindeki bireysel farklılıkları anlayabilme												
19.Öğrencilerin dil gelişim düzeylerini geliştirmeye yönelik öğrenme-öğretme ortamı hazırlayabilme												
GELİŞİM KURAMLARI İLE İLGİLİ HEDEFLER (DEVAMI)	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨
20.Ahlaki gelişim süreçleri bilgisi												
21. Ahlaki gelişim süreçleri ile ilgili farklı kuramları anlayabilme												
22.Ahlaki gelişim süreçleri ile ilgili farklı kuramları karşılaştırabilme												
23.Öğrencilerin ahlaki gelişim süreçlerini takip edebilme												
24. Öğrencilerin ahlaki gelişimlerindeki bireysel farklılıkları anlayabilme												
25.Öğrencilerin ahlaki gelişimlerine yardımcı olabilme												
26.Öğrencilerin ahlaki gelişim düzeylerini geliştirmeye yönelik öğrenme-öğretme ortamı hazırlayabilme												
27.Kişilik gelişimi süreçleri bilgisi												
28.Kişilik gelişim süreçleri ile ilgili farklı kuramları anlayabilme												
29.Kişilik gelişim süreçleri ile ilgili farklı kuramları karşılaştırabilme												
30.Öğrencilerin kişilik gelişimi süreçlerini takip edebilme												
31.Öğrencilerin kişilik gelişimlerindeki bireysel farklılıkları anlayabilme												
32.Öğrencilerin kişilik gelişimlerine yardımcı olabilme												
33.Öğrencilerin kişilik gelişim düzeylerini geliştirmeye yönelik öğrenme-öğretme ortamı hazırlayabilme												

	Bir öğretmen adayı olarak aşağıda verilen kazanımlar sizce **ne derece önemlidir?**						Verilen kazanımların her birinde kendinizi **ne derece yeterli** görüyorsunuz?					
	Önemsiz	Az önemli	Kararsızım	Önemli	Çok önemli	Fikrim yok	Yetersiz	Az yeterli	Kararsızım	Yeterli	Çok yeterli	Fikrim yok
	1	2	3	4	5	FY	1	2	3	4	5	FY
ÖĞRENME KURAMLARI İLE İLGİLİ HEDEFLER												
34.Davranışçı yaklaşımlara (örn. Klasik ve Edimsel Koşullanma Kuramları) göre öğrenmenin oluşum sürecini açıklayabilme												
35.Davranışçı kuramcıların kendi aralarındaki yaklaşım farklarını ve benzerliklerini ayırt edebilme												
36.Davranışçı yaklaşımların ilkelerini öğretme-öğrenme ortamlarında kullanabilme												
37.Davranışçı yaklaşımın sınırlılık ve üstünlüklerini belirleyebilme												
38.Sosyal öğrenme kuramına göre öğrenme süreçlerini açıklayabilme												
39.Sosyal öğrenme kuramının ilkelerini öğretme-öğrenme ortamında kullanabilme												
40. Sosyal öğrenme kuramının sınırlılık ve üstünlüklerini belirleyebilme												
41.Sosyal öğrenme kuramı ile davranışçı ve bilişsel öğrenme kuramları arasındaki benzerlik ve farklılıkları analiz edebilme												
42.Bilişsel yaklaşımlara (örn. Gestalt ve Bilgiyi İşleme Kuramları) göre öğrenmenin oluşum sürecini açıklayabilme												
43.Bilişsel kuramcıların kendi aralarındaki yaklaşım farklarını ve benzerliklerini ayırt edebilme												
44.Bilişsel yaklaşımların ilkelerini öğretme-öğrenme ortamlarında kullanabilme												
45. Bilişsel yaklaşımın sınırlılık ve üstünlüklerini belirleyebilme												
46. Bilişsel yaklaşım ile davranışçı yaklaşım arasındaki farklılıkları belirleyebilme												
GÜDÜLENME İLE İLGİLİ HEDEFLER												
47. Güdülenme ile öğrenme arasındaki ilişkiyi açıklayabilme												
48. İçsel ve dışsal güdülenme kaynaklarını belirleyebilme												

	Bir öğretmen adayı olarak aşağıda verilen kazanımlar sizce **ne derece önemlidir?**						Verilen kazanımların her birinde kendinizi **ne derece yeterli** görüyorsunuz?					
	Önemsiz	Az önemli	Kararsızım	Önemli	Çok önemli	Fikrim yok	Yetersiz	Az yeterli	Kararsızım	Yeterli	Çok yeterli	Fikrim yok
	1	2	3	4	5	FY	1	2	3	4	5	FY
49.Güdülenme ile ilgili farklı kuramları açıklayabilme												
50. Güdülenme ile ilgili kuramların kendi aralarındaki farklılıkları ve benzerlikleri ayırt edebilme												
51. Öğrenme ortamında öğrencileri güdüleyebilme												
GENEL HEDEFLER												
52. Bir ünite içerisinde geçen ilişkili konu ve kavramları gruplandırabilme												
53.Konunun bütünü ve parçaları arasında ilişki kurabilme												
54. Gelişim ve Öğrenme kuramları arasında ilişki kurabilme												
55. Birden fazla öğrenme kuramını öğretme-öğrenme ortamında uygulayabilme												
56. Öğrenilenleri başka eğitim derslerinde de kullanabilme												
57. Öğrenilenleri okul dışında da kullanabilme												

III. DERSİN İŞLENİŞİ

Aşağıda eğitim-öğretim sürecinde yer alabilecek etkinlikler verilmiştir. Bu etkinliklerin bu dönem işlenen "Gelişim ve Öğrenme" dersinde **ne sıklıkta yer almış** olduğunu ve bu etkinliklerin kullanılmasının bu dersin öğretilmesinde/öğrenilmesinde **ne derecede etkili** olabileceğini ölçek üzerinde ilgili kutucuğa √ işareti koyarak belirtiniz.

	Aşağıda belirtilen etkinlikler dersin işlenişinde **ne sıklıkta yer verildi**?						Aşağıdaki etkinliklerin dersin işlenişinde yer alması bu dersin öğretilmesinde/ öğrenilmesinde sizce **ne derece etkili olur?**					
	Hiç	Nadiren	Bazen	Çoğunlukla	Her zaman	Fikrim yok	Etkili değil	Biraz etkili	Kararsızım	Etkili	Çok etkili	Fikrim yok
	1	2	3	4	5	FY	1	2	3	4	5	FY
1. Dersin öğrenci merkezli bir yaklaşımla işlenmesi												
2. Dersin öğretmen merkezli bir yaklaşımla işlenmesi												
3. Eleştirel düşünme becerinizi geliştirmeye yönelik etkinliklerin yer verilmesi												
4. Yaratıcı düşünme becerinizi geliştirmeye yönelik etkinliklerin yer verilmesi												

	Aşağıda belirtilen etkinlikler dersin işlenişinde **ne sıklıkta yer verildi**?						Aşağıdaki etkinliklerin dersin işlenişinde yer alması <u>bu dersin öğretilmesinde/ öğrenilmesinde</u> sizce **ne derece etkili olur?**					
	Hiç	Nadiren	Bazen	Çoğunlukla	Her zaman	Fikrim yok	Etkili değil	Biraz etkili	Kararsızım	Etkili	Çok etkil	Fikrim yok
	1	2	3	4	5	FY	1	2	3	4	5	FY
5. Problem çözme becerinizi geliştirmeye yönelik etkinliklerin yer alması												
6.Öğrencilere öğrenme süreçlerinde belirli etkinliklerde sorumlulukların verilmesi												
7.Öğrencilerin konuları sunması												
8.Öğrencilerin derse aktif katılımının sağlanması												
9.Öğrenci-öğretmen arasında etkileşimin sağlanması												
10.Öğrenciler arasında etkileşimin sağlanması												
11.Konuların birbirleri ile ilişkilendirilmesi												
12.Kuramlar arasında karşılaştırmaların yapılması												
13.Konu, olay ve olgular üzerine yorumlar yapılması												
14.Bu dersin diğer eğitim dersleriyle ilişkilendirilmesi												
15.Soru-cevap tekniği ile konunun işlenmesi												
16.Konu ile ilgili tartışmalar/münazaraların yapılması												
17.Konu ile ilgili makalelerin araştırılıp sınıfta tartışılması												
18.Gelişim ve öğrenme kuramları ile ilgili bireylerin ve öğrenme ortamlarının gözlenmesi												
19.Gözlemlerin sınıfta tartışılması												
20. Öğrencilerin kişisel, ahlaki ve sosyal gelişimlerini anlamak için farklı yaştaki bireylerle görüşmelerin yapılması												
21. Yapılan bu görüşmelerin sınıfta tartışılması												
22.Örnek olayların verilmesi ve öğrencilerin analiz etmesi												
23.Konu ile ilgili kavram haritalarının hazırlanması												
24.Araştırmaya yönelik çalışmaların/ödevlerin verilmesi												
25.İşlenen herhangi bir konu üzerinde düşündürmeye yönelik etkinliklerin yeralması												
26.Grup çalışmalarının yapılması												
27.Farklı ders kaynaklarının kullanılması												
28.Asetat üzerinden konuların anlatılması												
29.Çalışma yapraklarının doldurulması												
30. Konularla ilgili video/film izlenmesi												
31.Öğrencilere düzenli bir şekilde performansları ile ilgili dönütler verilmesi												
32.Misafir öğretmenin/öğretim elemanının çağırılması												
33.Öğrencilerin birbirlerini değerlendirmelerine yönelik ders etkinliklerine yer verilmesi												
34.Konu bitiminde izleme testlerinin verilmesi												
35.Drama												
36. Diğer (Belirtiniz)												

Aşağıda belirtilen etkinlikler dersin işlenişinde **ne sıklıkta yer verildi**?						Aşağıdaki etkinliklerin dersin işlenişinde yer alması <u>bu dersin öğretilmesinde/ öğrenilmesinde</u> sizce **ne derece etkili olur**?					
Hiç	Nadiren	Bazen	Çoğunlukla	Her zaman	Fikrim yok	Etkili değil	Biraz etkili	Kararsızım	Etkili	Çok etkil	Fikrim yok
1	2	3	4	5	FY	1	2	3	4	5	FY

37. Derste yer alan etkinliklerin düşünme becerinizi geliştirdiğini düşünüyor musunuz? Nasıl?

IV. GELİŞİM VE ÖĞRENME DERSİNDE ÖĞRENCİ BAŞARISININ DEĞERLENDİRİLMESİ

1. "Gelişim ve Öğrenme" dersinde öğrenci başarısının ne şekilde değerlendirilmesi uygun olur? (Birden fazla seçenek işaretleyebilirsiniz)

<u>Vize için</u>

(   ) Bireysel Proje   (   ) Grupla Proje   (   ) Ödev   (   ) İzleme testleri

(   ) Sunuş   (   ) Klasik yazılı sınav   (   ) Çoktan seçmeli test   (   ) Sınıf içi katılım

(   ) Sözlü sınav   (   ) Diğer (Belirtiniz).....................................

<u>Final için</u>

(   ) Bireysel Proje   (   ) Grupla Proje   (   ) Ödev   (   ) İzleme testleri

(   ) Sunuş   (   ) Klasik yazılı sınav   (   ) Çoktan seçmeli test   (   ) Sınıf içi katılım

(   ) Sözlü sınav   (   ) Diğer (Belirtiniz).....................................

Yardım ve katkılarınız için teşekkür eder, başarılar dilerim.

APPENDIX B

NEEDS ASSESSMENT QUESTIONNAIRE FOR GRADUATES

Sevgili öğrenciler,

Bu anket, G.Ü. Ticaret ve Turizm Eğitim Fakültesi'nde okutulan "Gelişim ve Öğrenme" dersi ile ilgili temel ihtiyaç ve beklentilerin saptanması amacı ile hazırlanmıştır. Anketten elde edilecek bilgiler, bu dersin geliştirilmesine yönelik olarak yürütülecek çalışma için kullanılacaktır. Lütfen ilgili maddeleri dikkatle inceleyerek verilen boşluk veya kutucuklara yanıtınızı yazınız/işaretleyiniz. Ankete adınızı yazmanız gerekmemektedir. Toplanan bilgiler yukarıda belirtilen amaç dışında kullanılmayacaktır.

Katkılarınızdan dolayı teşekkür ederim.
Öğr.Gör.Banu Yücel Toy

I. GENEL BİLGİLER
1. Cinsiyet: ☐ Kız ☐ Erkek   2. Yaş:
3. Mezun Olduğunuz Bölüm: 4. Mezuniyet Yılı:
5. Görev Yaptığınız İl: 6. Öğretmenlik Görev Süreniz:

II. DERSİN HEDEFLERİ ve İÇERİĞİ

Aşağıda "Gelişim ve Öğrenme" dersi ile ilgili ifadeler verilmiştir. Bir öğretmen olarak, bu ifadelerde yer alan **kazanımlardan hangisinin önemli** olduğunu ve <u>Gelişim ve Öğrenme Dersi süresince</u> hangisini **ne derecede kazanmış** olduğunuzu ölçek üzerinde ilgili kutucuğa √ işareti koyarak belirtiniz.

	Bir öğretmen olarak aşağıda verilen kazanımlar sizce **ne derece önemlidir?**						Verilen kazanımların her birini **ne derecede kazanmış olduğunuzu** düşünüyorsunuz?					
	Önemsiz	Az önemli	Orta derecede öndemli	Önemli	Çok önemli	Fikrim yok	Yetersiz	Az yeterli	Kararsızım	Yeterli	Çok yeterli	Fikrim yok
	1	2	3	4	5	FY	1	2	3	4	5	FY
GELİŞİM VE ÖĞRENME İLE İLGİLİ TEMEL KAVRAMLAR İLE İLGİLİ HEDEFLER	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨
1. Gelişim ile ilgili temel kavramlar bilgisi												
2. Öğrenme ile ilgili temel kavramlar bilgisi												
GELİŞİM KURAMLARI İLE İLGİLİ HEDEFLER	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨
3. Fiziksel ve devinsel (psiko-motor) gelişim süreçleri bilgisi												
4. Öğrencilerin fiziksel ve devinsel gelişim süreçlerini takip edebilme												

270

	Bir öğretmen olarak aşağıda verilen kazanımlar sizce **ne derece önemlidir?**						Verilen kazanımların her birini **ne derecede kazanmış olduğunuzu** düşünüyorsunuz?					
	Önemsiz	Az önemli	Orta derecede öndemli	Önemli	Çok önemli	Fikrim yok	Yetersiz	Az yeterli	Kararsızm	Yeterli	Çok yeterli	Fikrim yok
	1	2	3	4	5	FY	1	2	3	4	5	FY
5. Öğrencilerin fiziksel gelişimlerindeki bireysel farklılıkları anlayabilme												
6.Öğrencilerin fiziksel ve devinsel gelişimlerine yardımcı olabilme												
7.Öğrencilerin fiziksel ve devinsel gelişim düzeylerini geliştirmeye yönelik öğretme ve öğrenme ortamı hazırlayabilme												
8.Bilişsel gelişim süreçleri bilgisi												
9.Bilişsel gelişim süreçleri ile ilgili farklı kuramları anlayabilme												
10.Bilişsel gelişim süreçleri ile ilgili farklı kuramları karşılaştırabilme												
11.Öğrencilerin bilişsel gelişim süreçlerini takip edebilme												
12. Öğrencilerin bilişsel gelişimlerindeki bireysel farklılıkları anlayabilme												
13.Öğrencilerin bilişsel gelişimlerine yardımcı olabilme												
14.Öğrencilerin bilişsel gelişim düzeylerini geliştirmeye yönelik öğrenme-öğretme ortamı hazırlayabilme												
15. Dil gelişimi süreçleri bilgisi												
16.Dil gelişimi ile ilgili farklı yaklaşımları anlayabilme												
17.Öğrencilerin dil gelişim süreçlerini takip edebilme												
18.Öğrencilerin dil gelişimlerindeki bireysel farklılıkları anlayabilme												
19.Öğrencilerin dil gelişim düzeylerini geliştirmeye yönelik öğrenme-öğretme ortamı hazırlayabilme												
20.Ahlaki gelişim süreçleri bilgisi												
21. Ahlaki gelişim süreçleri ile ilgili farklı kuramları anlayabilme												

	Bir öğretmen olarak aşağıda verilen kazanımlar sizce **ne derece önemlidir?**						Verilen kazanımların her birini **ne derecede kazanmış olduğunuzu** düşünüyorsunuz?					
	Önemsiz	Az önemli	Orta derecede öndemli	Önemli	Çok önemli	Fikrim yok	Yetersiz	Az yeterli	Kararsızım	Yeterli	Çok yeterli	Fikrim yok
	1	2	3	4	5	FY	1	2	3	4	5	FY
GELİŞİM KURAMLARI İLE İLGİLİ HEDEFLER (DEVAMI)												
22.Ahlaki gelişim süreçleri ile ilgili farklı kuramları karşılaştırabilme												
23.Öğrencilerin ahlaki gelişim süreçlerini takip edebilme												
24. Öğrencilerin ahlaki gelişimlerindeki bireysel farklılıkları anlayabilme												
25.Öğrencilerin ahlaki gelişimlerine yardımcı olabilme												
26.Öğrencilerin ahlaki gelişim düzeylerini geliştirmeye yönelik öğrenme-öğretme ortamı hazırlayabilme												
27.Kişilik gelişimi süreçleri bilgisi												
28.Kişilik gelişim süreçleri ile ilgili farklı kuramları anlayabilme												
29.Kişilik gelişim süreçleri ile ilgili farklı kuramları karşılaştırabilme												
30.Öğrencilerin kişilik gelişimi süreçlerini takip edebilme												
31.Öğrencilerin kişilik gelişimlerindeki bireysel farklılıkları anlayabilme												
32.Öğrencilerin kişilik gelişimlerine yardımcı olabilme												
33.Öğrencilerin kişilik gelişim düzeylerini geliştirmeye yönelik öğrenme-öğretme ortamı hazırlayabilme												
ÖĞRENME KURAMLARI İLE İLGİLİ HEDEFLER												
34.Davranışçı yaklaşımlara (örn. Klasik ve Edimsel Koşullanma Kuramları) göre öğrenmenin oluşum sürecini açıklayabilme												
35.Davranışçı kuramcıların kendi aralarındaki yaklaşım farklarını ve benzerliklerini ayırt edebilme												

	Bir öğretmen olarak aşağıda verilen kazanımlar sizce **ne derece önemlidir?**						Verilen kazanımların her birini **ne derecede kazanmış olduğunuzu** düşünüyorsunuz?					
	Önemsiz	Az önemli	Orta derecede öndemli	Önemli	Çok önemli	Fikrim yok	Yetersiz	Az yeterli	Kararsızım	Yeterli	Çok yeterli	Fikrim yok
	1	2	3	4	5	FY	1	2	3	4	5	FY
36.Davranışçı yaklaşımların ilkelerini öğretme-öğrenme ortamlarında kullanabilme												
37.Davranışçı yaklaşımın sınırlılık ve üstünlüklerini belirleyebilme												
38.Sosyal öğrenme kuramına göre öğrenme süreçlerini açıklayabilme												
39.Sosyal öğrenme kuramının ilkelerini öğretme-öğrenme ortamında kullanabilme												
40. Sosyal öğrenme kuramının sınırlılık ve üstünlüklerini belirleyebilme												
41.Sosyal öğrenme kuramı ile davranışçı ve bilişsel öğrenme kuramları arasındaki benzerlik ve farklılıkları analiz edebilme												
42.Bilişsel yaklaşımlara (örn. Gestalt ve Bilgiyi İşleme Kuramları) göre öğrenmenin oluşum sürecini açıklayabilme												
43.Bilişsel kuramcıların kendi aralarındaki yaklaşım farklarını ve benzerliklerini ayırt edebilme												
44.Bilişsel yaklaşımların ilkelerini öğretme-öğrenme ortamlarında kullanabilme												
45. Bilişsel yaklaşımın sınırlılık ve üstünlüklerini belirleyebilme												
46. Bilişsel yaklaşım ile davranışçı yaklaşım arasındaki farklılıkları belirleyebilme												
GÜDÜLENME İLE İLGİLİ HEDEFLER	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨
47. Güdülenme ile öğrenme arasındaki ilişkiyi açıklayabilme												
48. İçsel ve dışsal güdülenme kaynaklarını belirleyebilme												
49.Güdülenme ile ilgili farklı kuramları açıklayabilme												
50. Güdülenme ile ilgili kuramların kendi aralarındaki farklılıkları ve benzerlikleri ayırt edebilme												
51. Öğrenme ortamında öğrencileri güdüleyebilme												

	Bir öğretmen olarak aşağıda verilen kazanımlar sizce **ne derece önemlidir?**						Verilen kazanımların her birini **ne derecede kazanmış olduğunuzu** düşünüyorsunuz?					
	Önemsiz	Az önemli	Orta derecede öndemli	Önemli	Çok önemli	Fikrim yok	Yetersiz	Az yeterli	Kararsızım	Yeterli	Çok yeterli	Fikrim yok
	1	2	3	4	5	FY	1	2	3	4	5	FY
GENEL HEDEFLER	/////	/////	/////	/////	/////	/////	/////	/////	/////	/////	/////	/////
52. Bir ünite içerisinde geçen ilişkili konu ve kavramları gruplandırabilme												
53. Konunun bütünü ve parçaları arasında ilişki kurabilme												
54. Gelişim ve Öğrenme kuramları arasında ilişki kurabilme												
55. Birden fazla öğrenme kuramını öğretme-öğrenme ortamında uygulayabilme												
56. Öğrenilenleri başka eğitim derslerinde de kullanabilme												
57. Öğrenilenleri okul dışında da kullanabilme												

III. DERSİN ETKİNLİKLERİ

Aşağıda eğitim-öğretim sürecinde yer alabilecek etkinlikler verilmiştir. Bir öğretemen olarak, aşağıda verilen etkinliklerin "Gelişim ve Öğrenme" dersinin öğrenilmesinde ve öğrencilerin düşünme becerilerinin geliştirilmesinde **ne derecede etkili** olabileceğini ölçek üzerinde ilgili kutucuğa √ işareti koyarak belirtiniz.

	Aşağıdaki etkinliklerin dersin işlenişinde yer alması, bu dersin öğretilmesinde/ öğrenilmesinde sizce **ne derece etkili olur?**						Aşağıdaki etkinliklerin dersin işlenişinde yer alması, öğrencilerin düşünme becerilerini geliştirmede sizce **ne derece etkili olur?**					
	Etkili değil	Biraz etkili	Otra Düzeyde Etkili	Etkili	Çok etkil	Fikrim yok	Etkili değil	Biraz etkili	Otra Düzeyde Etkili	Etkili	Çok etkil	Fikrim yok
	1	2	3	4	5	FY	1	2	3	4	5	FY
1. Dersin öğrenci merkezli bir yaklaşımla işlenmesi												
2. Dersin öğretmen merkezli bir yaklaşımla işlenmesi												
3. Eleştirel düşünme becerinizi geliştirmeye yönelik etkinliklerin yer verilmesi												
4. Yaratıcı düşünme becerinizi geliştirmeye yönelik etkinliklerin yer verilmesi												
5. Problem çözme becerinizi geliştirmeye yönelik etkinliklerin yer alması												
6. Öğrencilere öğrenme süreçlerinde belirli etkinliklerde sorumlulukların verilmesi												
7. Öğrencilerin konuları sunması												

274

	Aşağıdaki etkinliklerin dersin işlenişinde yer alması, bu dersin öğretilmesinde/ öğrenilmesinde sizce **ne derece etkili olur?**						Aşağıdaki etkinliklerin dersin işlenişinde yer alması, öğrencilerin düşünme becerilerini geliştirmede sizce **ne derece etkili olur?**					
	Etkili değil	Biraz etkili	Otra Düzeyde Etkili	Etkili	Çok etkil	Fikrim yok	Etkili değil	Biraz etkili	Otra Düzeyde Etkili	Etkili	Çok etkil	Fikrim yok
	1	2	3	4	5	FY	1	2	3	4	5	FY
8.Öğrencilerin derse aktif katılımının sağlanması												
9.Öğrenci-öğretmen arasında etkileşimin sağlanması												
10.Öğrenciler arasında etkileşimin sağlanması												
11.Konuların birbirleri ile ilişkilendirilmesi												
12.Kuramlar arasında karşılaştırmaların yapılması												
13.Konu, olay ve olgular üzerine yorumlar yapılması												
14.Bu dersin diğer eğitim dersleriyle ilişkilendirilmesi												
15.Soru-cevap tekniği ile konunun işlenmesi												
16.Konu ile ilgili tartışmalar/münazaraların yapılması												
17.Konu ile ilgili makalelerin araştırılıp sınıfta tartışılması												
18.Gelişim ve öğrenme kuramları ile ilgili bireylerin ve öğrenme ortamlarının gözlenmesi												
19.Gözlemlerin sınıfta tartışılması												
20. Öğrencilerin kişisel, ahlaki ve sosyal gelişimlerini anlamak için farklı yaştaki bireylerle görüşmelerin yapılması												
21. Yapılan bu görüşmelerin sınıfta tartışılması												
22.Örnek olayların verilmesi ve öğrencilerin analiz etmesi												
23.Konu ile ilgili kavram haritalarının hazırlanması												
24.Araştırmaya yönelik çalışmaların/ödevlerin verilmesi												
25.İşlenen herhangi bir konu üzerinde düşündürmeye yönelik etkinliklerin yeralması												
26.Grup çalışmalarının yapılması												
27.Farklı ders kaynaklarının kullanılması												
28.Asetat üzerinden konuların anlatılması												
29.Çalışma yapraklarının doldurulması												
30. Konularla ilgili video/film izlenmesi												
31.Öğrencilere düzenli bir şekilde performansları ile ilgili dönütler verilmesi												
32.Misafir öğretmenin/öğretim elemanının çağırılması												
33.Öğrencilerin birbirlerini değerlendirmelerine yönelik ders etkinliklerine yer verilmesi												
34.Konu bitiminde izleme testlerinin verilmesi												
35.Drama												

275

36. Bu dersin öğrenilmesinde ya da öğretilmesinde etkili olabileceğini düşündüğünüz başka etkinlikler varsa lütfen belirtiniz.

IV. GELİŞİM VE ÖĞRENME DERSİNDE ÖĞRENCİ BAŞARISININ DEĞERLENDİRİLMESİ

1. Size göre, "Gelişim ve Öğrenme" dersinde öğrenci başarısının ne şekilde değerlendirilmesi uygun olur? (Birden fazla seçenek işaretleyebilirsiniz)

<u>Vize için</u>

( ) Bireysel Proje   ( ) Grupla Proje   ( ) Ödev   ( ) İzleme testleri

( ) Sunuş   ( ) Klasik yazılı sınav   ( ) Çoktan seçmeli test   ( ) Sınıf içi katılım

( ) Sözlü sınav   ( ) Diğer (Belirtiniz).....................................

<u>Final için</u>

( ) Bireysel Proje   ( ) Grupla Proje   ( ) Ödev   ( ) İzleme testleri

( ) Sunuş   ( ) Klasik yazılı sınav   ( ) Çoktan seçmeli test   ( ) Sınıf içi katılım

( ) Sözlü sınav   ( ) Diğer (Belirtiniz)....................................

Yardım ve katkılarınız için teşekkür eder, başarılar dilerim.

INTERVIEW QUESTIONS FOR THE EXPERT AT MONE

Tarih ve zaman (Başlama ve Bitiş):
Cinsiyet:
Yaş:
Görevi:
Görev Süresi:

GİRİŞ

Merhaba, benim ismim Banu Yucel Toy. Gazi Üniversitesi Ticaret ve Turizm Eğitim Fakültesi'nde öğretim görevlisi olarak çalışıyorum. Aynı zamanda ODTÜ Sosyal Bilimler Enstitüsü'nde Eğitim Bilimleri ana bilim dalinda Eğitimde Program Geliştirme alanında doktoramı yapıyorum. Doktora çalışmam kapsamında Gelişim ve Öğrenme dersinin eleştirel düşünme becerisine yönelik geliştirilmesi ile ilgili bir nitel araştırma yapıyorum.Sizin de bu konuda düşüncelerinizi almak istiyorum.Bu araştırmadan elde edilen bilgilerin bu dersin eleştirel düşünme becerisine yönelik geliştirilmesinde yardımcı olacağını düşünüyorum..

Başlamadan once, bazı noktalara açıklık getirmek istiyorum:
> ➢ *Görüşmenin yaklaşık olarak 30 dakikanızı alacağınızı düşünüyorum.*
> ➢ *Bu görüşme boyunca söylediğiniz herşey gizli kalacaktır. Elde edilen bilgiler hiçkimseye iletilmeyecektir ve açıklanan hiçbir bilgi üzerinde isminiz belirtilmeyecektir.*
> ➢ *Görüşme sırasında istediğiniz zaman soru sormakta ve görüşmeyi sonlandırmakta özgürsünüz.*
> ➢ *Başlamadan önce sormak istediğiniz başka bir soru var mı?*
> ➢ *İzin verirseniz görüşme sırasındaki konuşmaları kaydetmeyi istiyorum. Bu şekilde, hem zamanı daha etkili kullanabiliriz, hem de görüşmeden sonra cevaplarınızı daha detaylı analiz edebilirim. Herhangi bir rahatsızlık duyduğunuz taktirde kaseti ve görüşme notlarını alabilirsiniz. Sizce de uygun mudur?*
> ➢ *Bu araştırmaya katılmayı kabul ettiğiniz ve zaman ayırdığınız için teşekkür ederim.*

GENEL SORULAR

1. Eğitim geçmişiniz nedir?
   İpucu: Lisans, yüksek lisans ve doktora eğitimi
2. Kaç yıldır eğitim alanında çalışıyorsunuz?
3. Bu süre içerisinde öğretmenlik eğitimine yönelik ne tür çalışmalar yaptınız?

ÖĞRETMEN EĞİTİMİ İLE İLGİLİ GÖRÜŞME SORULARI

1. Size göre, öğretmenlik eğitiminin temel hedefleri nelerdir?
1.a. Peki, şu andaki öğretmenlik eğitimini nasıl değerlendiriyorsunuz?
   İpucu: Temel hedeflere ulaşmada yeterli buluyor musunuz?

1.b.   Hedeflere ulaşmada yaşanan sorunlar var mıdır? Bunlar nelerdir?
1.c.   Sorunların çözümüne yönelik neler yapılabilir?

2.   Size göre iyi bir öğretmen genel olarak ne tür özelliklere sahip olmalıdır?
2.a.   Siz gözlemlediğiniz ya da birlikte çalıştığınız öğretmenlerde ne gibi olumlu ya da olumsuz özellikler yada eksiklikler görüyorsunuz?

3.   Eğitim Fakültelerinde okutulan Gelişim ve Öğrenme dersinin gerekliliğine inanıyor musunuz?
3.a.   Bu dersin öğretmenlik eğitimine katkılarının neler olabileceğini düşünüyorsunuz?

4.   Bu dersin temel hedefleri size göre nelerdir?
4.a.   Sizce ülkemizde öğretmenlik eğitimi kapsamında verilen bu ders bu hedeflere ulaşmada ne derecede yeterlidir?
    Alternatif Soru: Hedeflere ulaşmada sorunlar var mıdır?
4.b.   Eğer sorunlar varsa bunlar nelerdir? Söz konusu sorunlar nasıl giderilebilir?

5.   Gelişim ve Öğrenme dersinin geliştirilmesi için neler yapılmalıdır?
5.a.   Ne tür konuları içermelidir?
5.b.   Nasıl işlenmelidir? Hangi yöntem, teknik yada stratejiler kullanılmalıdır?
5.c.   Nasıl değerlendirme yapılmalıdır?

6.   Gelişim ve Öğrenme dersinin geliştirilmesi ile ilgili eklemek istediğiniz başka beklenti ve önerileriniz varsa lütfen belirtiniz?

Yardımlarınız ve katkılarınız için çok teşekkür ederim. Son olarak, değiştirmek yada eklemek istediğiniz bilgilerin olabileceği varsayımıyla yapılan bu görüşme çözümlendikten sonra sonuçlarını birlikte incelemek ister misiniz?

APPENDIX D

INTERVIEW QUESTIONS FOR THE INSTRUCTOR

Tarih ve zaman (Başlama ve Bitiş):
Cinsiyet:
Yaş:
Deneyim süresi:
Okutmakta olduğu dersler:
Bu dersleri okutma süresi:

GİRİŞ

Merhaba, Doktora çalışmam kapsamında Gelişim ve Öğrenme dersinin eleştirel düşünme becerisine yönelik geliştirilmesi ile ilgili bir araştırma yapıyorum.Sizin de bu konuda düşüncelerinizi almak istiyorum.Bu araştırmadan elde edilen bilgilerin bu dersin eleştirel düşünme becerisine yönelik geliştirilmesinde yardımcı olacağını umuyorum. Ayrıca, elde edilen bilgilerin Ticaret ve Turizm Eğitim Fakültesinin öğretim sistemini ve misyonunu daha da geliştirmede de yardımcı olacağını düşünüyorum.

Başlamadan once, bazı noktalara açıklık getirmek istiyorum:
➢ *Görüşmenin yaklaşık olarak 60 dakikanızı alacağınızı düşünüyorum.*
➢ *Bu görüşme boyunca söylediğiniz herşey gizli kalacaktır. Elde edilen bilgiler hiçkimseye iletilmeyecektir ve açıklanan hiçbir bilgi üzerinde isimleriniz belirtilmeyecektir.*
➢ *Görüşme sırasında istediğiniz zaman soru sormakta ve görüşmeyi sonlandırmakta özgürsünüz.*
➢ *Başlamadan önce sormak istediğiniz başka bir soru var mı?*
➢ *İzin verirseniz görüşme sırasındaki konuşmaları kaydetmeyi istiyorum. Bu şekilde, hem zamanı daha etkili kullanabiliriz, hem de görüşmeden sonra cevaplarınızı daha detaylı analiz edebilirim. Herhangi bir rahatsızlık duyduğunuz taktirde kaseti ve görüşme notlarını alabilirsiniz. Sizce de uygun mudur?*
➢ *Bu araştırmaya katılmayı kabul ettiğiniz ve zaman ayırdığınız için teşekkür ederim.*

GENEL SORULAR

o   Eğitim geçmişiniz nedir?
     İpucu: Lisans, yüksek lisans ve doktora eğitimi
o   Kaç yıldır eğitim alanında çalışıyorsunuz?
o   Bu süre içerisinde öğretmenlik eğitimine yönelik çalışmalar yaptınız mı ya da katıldınız mı? Evetse, bunlar nelerdir?

ÖĞRETMENLİK EĞİTİMİNE İLİŞKİN GÖRÜŞME SORULARI

I. Fakültedeki Muhasebe Öğretmenlik Eğitimi ile ilgili sorular

1.   Size göre, öğretmen eğitiminin temel hedefleri nelerdir?
1.a.   Peki, şu anki öğretmen eğitimini nasıl değerlendiriyorsunuz?
         İpucu: Temel hedeflere ulaşmada yeterli buluyor musunuz?
1.b.   Hedeflere ulaşmada yaşanan sorunlar var mıdır? Bunlar nelerdir?
1.c.   Sorunların çözümüne yönelik neler yapılabilir?

2.   Size göre iyi bir Muhasebe Öğretmeni ne tür özelliklere sahip olmalıdır?
         İpucu: Mesleki açıdan?
                  Kişisel açıdan?
2.a.   Siz gözlemlediğiniz ya da birlikte çalıştığınız Muhasebe alanındaki öğretmenlerde ne gibi olumlu ya da olumsuz özellikler yada eksiklikler görüyorsunuz?
2.b.   Fakültemizdeki Muhasebe alanı öğrencilerine bir öğretmen adayı olarak baktığınızda ne gibi olumlu yada olumsuz özellikler görüyorsunuz?

II. Gelişim ve Öğrenme Dersi ile ilgili sorular

1.   Gelişim ve Öğrenme dersi, öğretmen adaylarının eğitimi için ne derecede önemlidir?

2.   Gelişim ve Öğrenme dersi, öğretmen adaylarına nasıl bir altyapı sağlamasını bekliyorsunuz?
         İpucu: Mesleki gelişim açısından?
                  Kişisel gelişim açısından?

3.   Gelişim ve Öğrenme dersinin sizin dersleriniz için önemi nedir?
3.a.   Sizin verdiğiniz eğitim derslerinizde öğretmen adaylarının "Gelişim ve Öğrenme" dersinden öğrendiklerini ortaya koyabilecekleri aktiviteler bulunuyor mu?
3.b.   Evet ise; bu aktivitelerde öğretmen adaylarının bu dersten öğrendiklerini ne derecede uyguladıklarını düşünüyorsunuz?

4.   Bu dersin temel hedefleri size göre ne olmalıdır?
4.a.   Sizce fakültemizde öğretmenlik eğitimi programında yer alan bu ders bu hedeflere ulaşmada ne derecede yeterlidir?
         Alternatif Soru 1: Hedeflere ulaşmada sorunlar var mıdır?
         Alternatif Soru 2:Öğrencilerinizi gözönüne aldığınız zaman, Gelişim ve Öğrenme dersinin yetersiz kaldığını düşündüğünüz noktalar var mı? Varsa nelerdir?
4.b.   Eğer sorunlar varsa bunlar nelerdir? Nasıl giderilebilir?

5.   Bu dersin geliştirilmesi için neler yapılmalıdır?
5.a.   Ne tür konuları içermelidir?
5.b.   Nasıl işlenmelidir? Hangi yöntem, teknik yada stratejiler kullanılmalıdır?
5.c.   Nasıl değerlendirme yapılmalıdır?

6.   Gelişim ve Öğrenme dersinin geliştirilmesi ile ilgili beklenti ve önerileriniz varsa lütfen belirtiniz?

Yardımlarınız ve katkılarınız için çok teşekkür ederim. Son olarak, değiştirmek yada eklemek istediğiniz bilgilerin olabileceği varsayımıyla yapılan bu görüşme çözümlendikten sonra sonuçlarını birlikte incelemek ister misiniz?

INTERVIEW QUESTIONS FOR THE VICE CHAIR OF THE DEPARTMENT OF ACCOUNTING TEACHER EDUCATION

Tarih ve zaman (Başlama ve Bitiş):
Cinsiyet:
Yaş:
Görevi:
Görev süresi:

GİRİŞ

Merhaba, doktora çalışmam kapsamında öğretmenlik meslek dersleri kapsamında yer alan Gelişim ve Öğrenme dersinin eleştirel düşünme becerisine yönelik geliştirilmesi ile ilgili bir araştırma yapıyorum.Sizin de bu konuda düşüncelerinizi almak istiyorum.Bu araştırmadan elde edilen bilgilerin bu dersin eleştirel düşünme becerisine yönelik geliştirilmesinde yardımcı olacağını umuyorum.

Başlamadan once, bazı noktalara açıklık getirmek istiyorum:

➤ Görüşmenin yaklaşık olarak 30 dakikanızı alacağınızı düşünüyorum.

➤ Bu görüşme boyunca söylediğiniz herşey gizli kalacaktır. Elde edilen bilgiler hiçkimseye iletilmeyecektir ve açıklanan hiçbir bilgi üzerinde isimleriniz belirtilmeyecektir.

➤ Görüşme sırasında istediğiniz zaman soru sormakta ve görüşmeyi sonlandırmakta özgürsünüz.

➤ Başlamadan önce sormak istediğiniz başka bir soru var mı?

➤ İzin verirseniz görüşme sırasındaki konuşmaları kaydetmeyi istiyorum. Bu şekilde, hem zamanı daha etkili kullanabiliriz, hem de görüşmeden sonra cevaplarınızı daha detaylı analiz edebilirim. Herhangi bir rahatsızlık duyduğunuz taktirde kaseti ve görüşme notlarını alabilirsiniz. Sizce de uygun mudur?

➤ Bu araştırmaya katılmayı kabul ettiğiniz ve zaman ayırdığınız için teşekkür ederim.

GENEL SORULAR

1. Eğitim geçmişiniz nedir?
   <u>İpucu:</u> Lisans, yüksek lisans ve doktora eğitimi
2. Kaç yıldır eğitim alanında çalışıyorsunuz?
3. Bu süre içerisinde öğretmenlik eğitimi ile ilgili çalışmalara katıldınız mı? Varsa, bunlar nelerdir?

ÖĞRETMEN EĞİTİMİ İLE İLGİLİ GÖRÜŞME SORULARI

1. Size göre, öğretmenlik eğitiminin temel hedefleri nelerdir?
1.d. Peki, şu andaki öğretmenlik eğitimini nasıl değerlendiriyorsunuz?
   <u>İpucu:</u> Temel hedeflere ulaşmada yeterli buluyor musunuz?
1.e. Hedeflere ulaşmada yaşanan sorunlar var mıdır? Bunlar nelerdir?
1.f. Sorunların çözümüne yönelik neler yapılabilir?

2.   Size göre iyi bir Muhasebe öğretmeni ne tür özelliklere sahip olmalıdır?
        İpucu: Mesleki açıdan?
                Kişisel açıdan?
2.b.   Siz gözlemlediğiniz ya da birlikte çalıştığınız Muhasebe alanındaki öğretmenlerde ne gibi olumlu ya da olumsuz özellikler yada eksiklikler görüyorsunuz?
2.c.   Fakültemizdeki Muhasebe alanı öğrencilerine bir öğretmen adayı olarak baktığınızda ne gibi olumlu yada olumsuz özellikler görüyorsunuz?

3.   Fakültemizde okutulan eğitim dersleri ile ilgili neler düşünüyorsunuz?
3a.   Gerekli buluyor musunuz? Neden?
3b.   İyi bir öğretmen olabilmeleri için yeterli görüyor musunuz? Neden?

4. Fakültemizdeki eğitim derslerinin geliştirilmesi ile ilgili eklemek istediğiniz başka beklenti ve önerileriniz varsa lütfen belirtiniz?

Yardımlarınız ve katkılarınız için çok teşekkür ederim. Son olarak, değiştirmek yada eklemek istediğiniz bilgilerin olabileceği varsayımıyla yapılan bu görüşme çözümlendikten sonra sonuçlarını birlikte incelemek ister misiniz?

APPENDIX F

STUDENT JOURNAL

Her hafta ders sonunda bu günlüklerin doldurulması ve öğretim elemanına teslim edilmesi gerekmektedir. Bu günlükler yazılırken objektif, tarafsız ve dürüst olunması oldukça önemlidir. Günlükler hazırlanırken aşağıda verilen sorular göz önünde bulundurulmalıdır.

Adı ve Soyadı: Numarası:	Tarih:

1. Bugün neler öğrendim? Bugünkü konunun önemli olan noktaları nelerdi?

2. Bugün işlenen konu açık ve anlaşılır mıydı? Neden?

3. Bugün yapılan etkinlikler konuyu öğrenmemde etkili miydi? Neden?

4. Bugün yapılan etkinliklerde düşünme becerimi kullanabildim mi? (Evetse) Nasıl?

5. Bugün yapılan etkinliklerin daha etkili olabilmesi için nelere yapılabilirdi?

6. Bugün beni zorlayan konular oldu mu? (Evetse) Bunlar nelerdi?

7. Bu konularda başarılı olabilmem için neler yapabilirim?

8. Bu konularda başarılı olabilmem için öğretim elemanı nasıl yardımcı olabilir?

9. Önümüzdeki haftalarda, bu dersin daha iyi işlenebilmesi için başka neler yapılabilir?

APPENDIX G

LIST OF THE INSTRUCTIONAL OBJECTIVES

Objectives Regarding Basic Concepts in Development and Learning

1	to know basic concepts regarding development
2	to know basic concepts regarding learning

Objectives Regarding Development Theories

3	to know physical and psychomotor development processes
4	to follow sts' physical and psychomotor development processes
5	to understand individual differences among sts in terms of physical development
6	to help sts' physical and psychomotor development
7	to prepare educational environment towards improving sts' physical and psychomotor development level
8	to know cognitive development processes
9	to understand different theories regarding cognitive development
10	to compare different theories regarding cognitive development
11	to follow sts' cognitive development process
12	to understand individual differences among sts in terms of cognitive development
13	to help sts' cognitive development
14	to prepare educational environment towards improving sts' congitive development level
15	to know linguistic development processes
16	to understand different approaches regarding linguistic development
17	to follow sts' linguistic development process
18	to understand individual differences among sts in terms of linguistic development
19	to prepare educational environment towards improving sts' linguistic development level
20	to know moral development processes
21	to understand different theories regarding moral development
22	to compare different theories regarding moral development
23	to follow sts' moral development process
24	to understand individual differences among sts in terms of moral development
25	to help sts' moral development
26	to prepare educational environment towards improving sts' moral development level
27	to know intellectual development processes
28	to understand different theories regarding personality development
29	to compare different theories regarding personality development
30	to follow sts' personality development process
31	to understand individual differences among sts in terms of personality development
32	to help sts' personality development
33	to prepare educational environment towards improving sts' personality development level

Objectives Regarding Learning Theories

34	to explain learning according to behaviorist approach
35	to distinguish differences and similarities among behaviorist theorists
36	to use behaviorist approach's principles in teaching-learning environment
37	to determine strengths and weaknesses of the behaviorist approach
38	to explain learning according to social learning theory
39	to use social learning theory's principles in teaching-learning environment
40	to determine strengths and weaknesses of the social learning theory
41	to analyze differences and similarities between social learning theory and behaviorist and cognitivist learning theories
42	to explain learning according to cognitivist approach
43	to distinguish differences and similarities among cognitivist theorists
44	to use cognitivist approach's principles in teaching-learning environment
45	to determine strengths and weaknesses of the cognitivist approach
46	to determine differences between cognitivist and behaviorist approaches

Objectives Regarding Motivation

47	to explain the relationship between learning and motivation
48	to determine internal and external motivation sources
49	to explain different theories regarding motivation
50	to distinguish differences and similarities among motivation theories
51	to motivate sts in an educational environment

General Objectives

52	to group related topics and concepts mentioned within a unit
53	to relate parts of a topic with whole topic
54	to relate development and learning theories
55	to apply more than one learning theory in a teaching-learning environment
56	to use what they have learned in other pedagogical courses
57	to use what they have learned outside of the school

TABLE OF SPECIFICATION

Objectives	Basic concepts regarding dev.	Physical and psychomotor dev.	Cognitive development	Moral development	Personality development	Basic concepts regarding learn.	Behaviorist approach to learning	Cognitivist approach to learning	Humanistic approach to learning	Motivation	Total	n (%25)
to define the basic concepts related to development and learning	4[a]					4	8	4		4	**24**	**6**
to define the basic principles of development	4										**4**	**1**
to explain the basic characteristics of the development process according to development theories		4	4	4	4						**16**	**4**
to explain the basic characteristics and principles of learning theories							8	12	4		**24**	**6**
to explain learning process according to different learning theories							8	4	4		**16**	**4**
to explain motivation according to different approaches										4	**4**	**1**
to apply development, learning and motivation theories in classroom environment			4	4	4		8	4	4		**28**	**7**
to compare and contrast learning theories and approaches		4	4	4	4		12	8	4	4	**44**	**11**
Total	**8**	**8**	**12**	**12**	**12**	**4**	**44**	**32**	**16**	**12**	**160**	**40**
n (%25)[b]	**2**	**2**	**3**	**3**	**3**	**1**	**11**	**8**	**4**	**3**	**40**	

[a], The number of behaviors related to objectives
[b], Decreased number of behaviors as to the given weight (.25)

APPENDIX I

TEST AND ITEM ANALYSIS RESULTS

Item no	Item difficulty (p)	Item discrimination (biserial correlation)	Item no	Item difficulty (p)	Item discrimination (biserial correlation)
1	0.569	0.287	21	0.431	0.345
2	0.644	0.346	22	0.667	0.431
3	0.408	0.435	23	0.506	0.561
4	0.259	0.299	24	0.667	0.261
5	0.609	0.430	25	0.356	0.374
6	0.856	0.214	26	0.494	0.351
7	0.287	0.206	27	0.649	0.226
8	0.356	0.264	28	0.230	0.512
9	0.500	0.138	29	0.690	0.448
10	0.333	0.311	30	0.782	0.403
11	0.218	0.466	31	0.471	0.211
12	0.644	0.277	32	0.868	0.478
13	0.914	0.293	33	0.276	0.375
14	0.471	0.463	34	0.638	0.314
15	0.776	0.354	35	0.253	0.398
16	0.770	0.385	36	0.310	0.130
17	0.713	0.400	37	0.701	0.430
18	0.483	0.343	38	0.460	0.132
19	0.224	0.320	39	0.874	0.513
20	0.420	0.399	40	0.908	0.322

TEST ANALYSIS RESULTS

Statistics	Value	Statistics	Value
Mean	21.684	Alpha	0.637
Variance	21.584	SEM	2.800
Std. Dev.	4.646	Mean P (Difficulty)	0.542
Minimum	10.000	Mean Item-Tot.	0.258
Maximum	33.000	Mean Biserial (Discrimination)	0.346
Median	21.000		

ACHIEVEMENT TEST

Testte, çoktan seçmeli 40 soru bulunmaktadır. Her sorunun 5 seçeneğinden <u>sadece</u> biri doğrudur. Bu doğru cevabı bulup cevap kağıdındaki ilgili seçeneği işaretleyerek cevabınızı belirtiniz. Sınav süresi: 65 dakikadır.

Başarılar
Öğr.Gör.Banu Yücel Toy

1. "Yeni bir öğrenme durumunda, bireyin önceden sahip olduğu özelliklerin tümünü kapsar" ifadesinde yer alan tanım aşağıdaki kavramlardan hangisine aittir?
   A. Büyüme
   B. Gelişme
   C. Hazırbulunuşluk
   D. Olgunlaşma
   E. Öğrenme

2. Aşağıdakilerden hangileri temel gelişim ilkeleri arasında bulunur?
   I. Gelişim süreklidir ve belli aşamalarda gerçekleşir.
   II. Gelişim alanları birbirinden bağımsızdır.
   III. Gelişim bir bütündür.
   IV. Gelişim özelden genele doğrudur.
   V. Gelişimde bireysel ayrılıklar vardır.
   A. I-III
   B. I-III-V
   C. I-II-III-IV
   D. I-II-III-V
   E. I-II-III-IV-V

3. Ergenlik dönemindeki fiziksel gelişim çerçevesinde aşağıdaki ifadelerden hangisi doğrudur?
   A. Kız ve erkeklerin seslerinde belirgin kalınlaşma görülür.
   B. Kız ve erkeklerde yağ dokusu fazlalaşır.
   C. Hız ve güç bakımından kızlar daha fazla etkinlik gösterir.
   D. Küçük kaslar gelişimini henüz tamamlamamıştır.
   E. Vücut koordinasyonu henüz yetişkinlik düzeyine ulaşmamıştır.

4. "Lise 1. Sınıfta okuyan bir öğrenciyi elindeki deney tüpünü düşürdüğü için beceriksizlikle suçlayan bir öğretmen" öğrencinin gelişimiyle ilgili hangi bilgiden haberdar <u>değildir</u>?
   A. Duygusal gelişimin bu dönemdeki özellikleri.
   B. Zihinsel gelişimin bu dönemdeki özellikleri.
   C. Psiko-motor gelişimin bu dönemdeki özellikleri.
   D. Duyu organlarının bu dönemdeki özellikleri.
   E. Ahlaki gelişimin bu dönemdeki özellikleri

5. "Ahmet, legolarla oynamayı çok sevmektedir. Öğretmeni birgün aynı sayıda legoları yanyana dizmiş ve daha sonra da üstüste koymuştur. Burada Ahmet, kullanılan lego sayısının legoların yanyana veya üstüste koyulmasına göre değiştiğini düşünmüştür." Burada verilen örnek olaya göre, Ahmet hangi bilişsel gelişim dönemindedir?
   A. Duyusal-motor
   B. İşlem öncesi
   C. İşlem sonrası
   D. Somut işlemler
   E. Soyut işlemler

6. Eğer bir ortaöğretim kurumunda öğretmen olsaydınız; Piaget'nin bilişsel gelişim kuramına göre sınıfınızda nasıl bir eğitim-öğretim ortamı hazırlamanız doğru olurdu?
   I. Eğitim-öğretim ortamında öğrencilerin yaşayarak öğrenmelerini sağlamak
   II. Bilişsel gelişimleri için öğrencilerin sınıfta aktif olmalarını sağlamak
   III. Öğrencilerin soyut düşünebilme yeteneklerini geliştirecek etkinliklere yer vermek
   IV. Çocukların bilişsel gelişim düzeylerinin üstünde bir eğitim ortamı hazırlamak
   A. I-II
   B. IIII-IV
   C. I-II-III
   D. I-II-IV
   E. I-II-III-IV

7. Aşağıdaki bilişsel gelişim ile ilgili görüşlerden hangileri Vygotsky'e aittir?
   I. Öğretim, öğrencinin gelişmeye açık alanını (yakınsal gelişim alanı) ileriye götürebildiği ölçüde etkilidir.
   II. Dil, bilgilerin başkalarından öğrenilmesinde ve paylaşılmasında önemli bir araçtır.
   III. Öğretmen aktif bir biçimde nesneleri ve fikirleri aktarırsa öğrenme etkili olur.
   IV. Öğrencilerin bilişsel gelişimlerinde yetişkinlerin desteği çok önemlidir ve gereklidir.
   A. I-II
   B. I-IV
   C. I-II-III
   D. I-II-IV
   E. I-II-III-IV

8. Herkesin kanunlara uyması gerektiğine, eğer kanunlara uyulmazsa toplumun düzeninin bozulacağına inanan bir kişi Kohlberg'ing ahlak gelişim kuramına göre hangi aşamadadır?
   A. Ahlaki özerklik
   B. Ahlaki görecelik
   C. Gelenek öncesi dönem
   D. Geleneksel dönem
   E. Gelenek sonrası dönem

9. Lisede bir öğretmen tarafından düzenlenen aşağıdaki etkinliklerden hangisi öğrencilerin ahlaki gelişimlerini hızlandırmaya yardımcı olabilir?
   A. Öğrencilere zeka testleri uygulaması
   B. Öğrencilere ahlaki gelişim kuramları ile ilgili bilgi vermesi
   C. Piknik, gezi gibi faaliyetler düzenlemesi
   D. Gazetede geçen toplumsal bir konuda tartışma düzenlemesi
   E. Öğrencilere bilimsel makale analizi yaptırması

10. Aşağıdakilerden hangileri Piaget ile Kohlberg'in ahlaki gelişim kuramları arasındaki benzer özelliklerdir?

I. Her iki kuramda da ahlaki gelişimin hızlandırılabileceği savunulur.

II. Her iki kuram da Piaget'nin bilişsel gelişim kuramından etkilenmiştir.

III. Kuralların gerektiğinde değiştirilebileceğine inanılması her iki kuramın üst düzey ahlaki gelişim döneminde görülen ortak bir özelliktir.

IV. Her iki kuram da çocukların ahlaki ikilemli sorulara verdiklere yanıtlara dayalı olarak geliştirilmiştir.

   A. I-IV
   B. II-III
   C. I-II-III
   D. I-III-IV
   E. I-II-III-IV

11. Freud'a göre, komşunun dediklerine kulak asan, onların dediklerine sıkı sıkıya bağlı kalan bir ebeveynin kişilik bileşenlerinden hangisi/hangileri baskındır?
   A. İd
   B. Ego
   C. Superego
   D. Ego-Superego
   E. Libido

12. Aşağıdakilerden hangisi Erickson'un Psikososyal gelişim kuramına göre öğretmenlerin dikkat etmesi gereken noktalardan biri <u>değildir?</u>
   A. Öğrencinin yapacağı işler konusundaki çabaları desteklenmelidir.
   B. Ergene çocuk gibi değil bir yetişkin gibi davranılmalıdır.
   C. Başarılı kişilerle tanışıp özdeşim kurmalarına yardımcı olunmalıdır.
   D. Öğrencilere başarabileceği sorumluluklar verilmelidir.
   E. Sorunlarını kendi başına çözebilmesi için ergen yalnız bırakılmalıdır.

13. Aşağıdakilerden hangisi Freud'un Psikoseksüel gelişim kuramını Psikososyal gelişim kuramından ayıran özelliklerinden biridir?
   A. Freud'a göre, bireylerin kişilik gelişimi yaşam boyu sürer.
   B. Freud'a göre, bir dönemdeki ihtiyaçlar karşılanmadığı zaman o döneme aşırı bağımlılık oluşur.
   C. Freud'a göre, psikoseksüel gelişim aşamaları bireyin yaşadığı kültüre göre değişir.
   D. Freud'a göre, sosyal yaşantı bireylerin kişilik gelişimlerini etkiler.
   E. Freud'a göre, bir dönemde olumsuz yaşanan denge bir sonraki dönemde olumlu yöne çevirilebilir.

14. Yaşantı sonucunda meydana gelen nispeten kalıcı izli davranış değişikliğine ne ad verilir?
   A. Öğrenme
   B. Eğitim
   C. Davranış
   D. Öğretme
   E. Yaşantı

15. "Klasik koşullanma" kuramına göre, koşullu uyarıcının meydana getirdiği doğal tepkiye ne denir?

    A. Koşullu tepki

    B. Koşulsuz uyarıcı

    C. Koşulsuz tepki

    D. Koşullu uyarıcı

    E. Nötr uyarıcı

16. "Bir öğrencinin sınıf öğretmeni tarafından sınıfta azarlanmasından dolayı okuldan ve derslerden soğumasını," Klasik Koşullanmanın hangi ilkesi ile açıklayabiliriz?

    A. Haber vericilik

    B. Pekiştirme

    C. Uyarıcı genellemesi

    D. Ayırt etme

    E. Sönme

17. "Anaokulunun ilk gününde diğer çocuklarla kavga eden bir çocuk, ertesi gün anaokuluna gitmemek için öfkeli tepkiler göstermektedir" Buradaki Klasik Koşullanmada, koşullu uyarıcı aşağıdakilerden hangisidir?

    A. Kavga etmek

    B. Kavga

    C. Diğer çocuklar

    D. Anaokulu

    E. Öfkelenmek

18. "Dilara, grup önünde konuşmaktan korkmaktadır. Bunun üzerine öğretmen, Dilara'nın korkusunu yenmesi için grup çalışmasında yapmış oldukları bir çalışmayı grupça sunmalarını ister. Daha sonra başka bir gün de Dilara'nın bireysel yaptığı bir çalışmayı sınıfa tek başına sunmasını ister. Bu sunumlar sırasında Dilara'nın, alkışlanıp takdir edilmesini sağlar. Bir süre sonra Dilara'nın korkusunu yendiği görülür." Buradaki örnek olayda öğretmen olumsuz bir koşullanmanın ortadan kaldırılması için hangi yolu kullanmıştır?

    A. Bıktırma

    B. Sönmesini bekleme

    C. Olumlu pekiştirme

    D. Ortamı değiştirme

    E. Karşı koşullanma

19. "Öğretmenin derse geç kalanları derse almayacağını dolayısı ile izleme testine giremeyeceklerini söylemesi ve bunun üzerine öğrencilerin derse zamanında gelmeye dikkat etmeleri" Skinner'ın Edimsel Koşullanma kuramına göre aşağıda verilenlerden hangisi ile ilişkilidir?

    A. Olumlu pekiştirme

    B. Olumsuz pekiştirme

    C. Ceza

    D. Sabit oranlı pekiştirme

    E. Sabit aralıklı pekiştirme

20. "Bir öğretmen, öğrencilerden matematik problemlerini çözmelerini istemeden önce dört işlemin nasıl yapıldığını, problem çözmede hangi adımların izlendiğini ve hangi problem cümlesinde hangi işlemin yapılacağını göstermiş ve öğrencilerden problemleri yapmalarını istemiştir. Problemleri çözerken yaptıkları her doğru davranışını da ödüllendirmiştir." Buradaki örnek olayın geçtiği bir eğitim-öğretim ortamında Edimsel Koşullanmanın hangi ilkesinden yararlanılmıştır?

   A. Davranış Şekillendirme
   B. Genelleme
   C. Olumsuz pekiştirme
   D. Premack
   E. Sabit aralıklı pekiştirme

21. Aşağıdakilerden hangileri Edimsel koşullanmayı Klasik koşullanmadan ayıran özellikler arasında yer alır?

   I. Edimsel koşullanma, istemli ve bilinçli yapılan davranışlarla ilgilidir.
   II. Edimsel koşullanmaya göre, davranış sonucu verilen pekiştireçler öğrenmede etkilidir.
   III. Edimsel koşullanmada, davranışın yapılma sıklığını arttıran uyarıcılar pekiştireçtir.

   IV. Edimsel koşullanmada, çeşitli pekiştirme tarifeleri vardır.
   V. Edimsel koşullanmada, davranışa sebep olan uyarıcılar önemlidir.
   A. II-III-IV
   B. III-IV-V
   C. I-III-IV-V
   D. I-II-III-IV
   E. I-II-III-IV-V

22. Aşağıdakilerden hangisi Sosyal Öğrenme Kuramı'na göre, dolaylı öğrenmeyi en doğru tanımlayan ifadedir?
   A. Bireyin, başkalarının davranışlarını gözlemlemesidir.
   B. Bireyin televizyondaki, bir kitaptaki yada sinemadaki bir karakteri model almasıdır.
   C. Bireyin çevresinden gözlemlediği bir davranışı olduğu gibi taklit etmesidir.
   D. Bireyin gözlemlediği farklı davranışları birleştirerek yeni davranışlar geliştirmesidir.
   E. Bireyin gözlemlediği bir davranışı ve sonuçlarını öğrenmesi ve ona göre kendini ayarlamasıdır.

23. Sosyal Öğrenme Kuramı'nın öğrenmeyi ve performansı etkileyen "karşılıklı belirleyicilik" ilkesine göre aşağıdakilerden hangisi davranışın çevre üzerine etkisi ile ilgili bir örnektir?
   A. Gürültü yapan bir öğrencinin sınıfta dikkati dağıtması
   B. Arkadaşları tarafından dışlanan tembel bir öğrencinin ders çalışmaya başlaması
   C. Ailesi tarafından sevilmeyen bir çocuğun düzenli olmaya çalışması
   D. Derslere geç gelen bir öğrencinin, öğretmenlerinden gördüğü tepki üzerine okuldan uzaklaşması
   E. Arkadaşları tarafından oyuna çağrılan bir çocuğun ödevini yapmaması

24. Sosyal Öğrenme Kuramı'na göre, öğrenme sürecinin ilk adımı dikkat etme sürecidir. Aşağıdakilerden hangisi dikkat etme sürecini etkileyen faktörlerden biri değildir?
   A. Seçilen modelin özelliklerinin dikkati çekici olması
   B. Gözlemcinin ön bilgileri, ilgisi ve dersden beklentileri
   C. Gözlemcinin sembolleştime kapasitesi
   D. Gözlemcinin duyu organlarının yeterliliği
   E. Davranışın gözlemcinin amacına yönelik olması

25. Aşağıdakilerden hangisi Sosyal Öğrenme kuramını Edimsel Koşullanma kuramından ayıran farklılıklardan biridir?

A. Sosyal bilişse kurama göre davranış sonucunda verilen pekiştireçler öğrenmede etkilidir.

B. Sosyal bilişsel kurama göre davranış sonucunda verilen ceza öğrenmede etkilidir.

C. Sosyal bilişsel kurama göre öğrenmede güdülenme etkilidir.

D. Sosyal bilişsel kuram öğrenmeyi hatırda tutma gibi bilişsel süreçlerle açıklar.

E. Sosyal bilişsel kurama göre öğrenmenin gerçekleşmesi için bireyin davranışı gerçekleştirmesi gerekir.

26. Aşağıdakilerden hangisi Gestalt kuramına göre iç görüsel öğrenme sürecinin özelliklerinden biri değildir?

A. Öğrenci problemin çözümüne bir süre düşündükten sonra ulaşır.

B. İçgörüsel öğrenmede problem, fiziksel deneme-yanılmalarla çözülür.

C. Problemi çözmek için gerekli yolları düşünür, verilen araç-gereçleri değerlendirir.

D. Önceki öğrenmelerini problemin çözümünde kullanabilir.

E. Zeki olanlar içgörüsel çözüme daha kısa sürede ulaşırlar.

27. Aşağıdakilerden hangisi Bilgiyi İşleme Kuramı'na göre yürütücü biliş kavramının tanımıdır?

A. Bireyin tüm biliş sürecini denetleyen sistemdir.

B. Duyu organları ile alınan bilginin yorumlanması ve anlamlandırılmasıdır.

C. Yeni öğrenilen bilgilerle eski bilgilerin ilişkilendirilmesidir.

D. Bilginin bir bellekten diğerine aktarılmasını sağlayan içsel, bilişsel etkinliklerdir.

E. Bireyi kendi öğrenme özelliklerinin farkında olmasıdır.

28. Bilgiyi işleme kuramına göre bellek türlerine ait aşağıda verilen özelliklerden hangileri doğrudur?

I. Duyusal kayıtın yetikliği çok geniş olmakla birlikte bilginin kalış süresi de uzundur.

II. Kısa süreli bellekten ayrılan bilgi dikkat ve algı süreçleri ile duyusal kayıta geçer.

III. Kısa süreli belleğe bilgi, duyusal kayıttan ve uzun süreli bellekten gelir.

IV. Uzun süreli belleğe bilgi hızla girer ama çabuk kaybolur.

V. Uzun süreli belleğe bilgi kısa süreli bellekten gelir.

A. II-V

B. III-V

C. III-IV

D. I-III-V

E. I-II-IV

29. "Lise 2 Fizik dersi öğretmeni, bilgilerin hemen unutulmasını veya ezberlenmesini engellemek istemektedir. Böylece öğrenciler ÖSS sınavına hazırlanırken çok zorluk çekmeyeceklerdir. Bu amaçla öğretmen aşağıda verilen etkinlikleri yapmayı planlamaktadır." Bu etkinliklerden hangisi, Bilgiyi İşleme kuramına uygun bir etkinlik değildir?

A. Öğrencilere öğrenme stratejilerinin öğretilmesi

B. Bilgilerin mümkünse şema yada kavram haritaları yardımıyla anlatılması

C. Sınıfta somut ve görsel materyallerin kullanılması

D. Unutmayı engelleyebilmek için zaman zaman tekrarın yapılması

E. Öğrencileri ödüllendirerek öğrenmeye güdülenmelerinin sağlanması

30. "(I) Bir geometri dersinde, üçgenlerin özellikleri anlatılmaktadır. (II) Öğretmen, konunun kısa anlatımından sonra öğrencilere çeşitli örnek sorular verir. (III) Öğrencilerin örnekleri kendilerinin yapmasını sağlar ve nasıl yaptıklarını arkadaşlarına anlatmalarını ister. (IV)Buarada her doğru yapana da bir artı (+) verir. (V) Böylece öğrenciler nerelerde yanlış nerelerde doğru yaptıklarını daha kolay anlarlar ve sonraki örneklerde daha dikkatli davranırlar. (VI) Bir sonraki dersin konusu ise eşkenar beşgendir. Bu konuya geçmeden önce öğretmen üçgenlerle ilgili kısa bir tekrar yapar."

Yukarıdaki örnek olayda, hangi etkinlik Bilgiyi İşleme Kuramı'na göre bilginin kısa süreli bellekten uzun süreli belleğe aktarılması için bireyin açık tekrar yapmasını sağlayıcı bir etkinliktir?

A. I
B.II
C. III
D. V
E. VI

31. Aşağıdakilerden hangisi, Yapılandırmacılık kuramının özellikleri arasında yer almaz?
A. Akran ve yetişkinlerle sosyal etkileşime girilmesi öğrenmede etkili ve önemlidir.
B. Anlamlı ve etkili öğrenme, gerçekçi konulara dayalı çalışmalarla gerçekleşir.
C. Bilgi öğrenci tarafından etkin şekilde biçimlendirilir; yani, yapılandırılır.
D. Bilginin yapılandırılmasında önbilgi, inançlar, ön yargılar vb. belirleyicidir.
E. Öz yeterlik, bilginin yapılandırılmasında en etkili özelliktir.

32. Aşağıdakilerden hangisi Yapılandırmacılık kuramına göre, öğrenme-öğretme ortamında olması gereken özellikler arasında yer almaz?
A. Problem çözme etkinlikleriyle öğrencilerin bilgiyi keşfetmeleri sağlanmalıdır.
B. Öğrencilerin başarısının değerlendirilmesinde sınavlardan yararlanılmalıdır.
C. Öğrencilerin öğretmen ve diğer öğrencilerle etkileşim kurmaları sağlanmalıdır.
D. Öğrencilere güncel ve yaşamla ilgili öğrenme etkinlikler düzenlenmelidir.
E. Bilgiyi farklı açılardan görmelerini sağlayacak etkinliklere yer verilmelidir.

33. Aşağıdakilerden hangisi Bilişsel yaklaşımı Davranışçı yaklaşımdan ayıran özelliklerden biridir?
A. Çevredeki uyarıcılar ve uyarıcıların davranışlar üzerine etkisini açıklar.

B. Davranışların biçimlendirilmesi hakkında bilgiler verir.
C. Pekiştireçler, davranışlar hakkında dönüt ve bilgi veren uyarıcılardır.
D. Öğrenme sürecinde, öğrenci pasiftir.
E. Sadece gözlenebilen ve ölçülebilen davranışlar öğrenmenin göstergesidir.

34. Aşağıdakilerden hangisi İnsancıl (Hümanistik) öğrenme yaklaşımının temel ilkelerinden biri değildir?
A. İnsanın duyuşsal özellikleri, bireyin eğitime ve öğrenmeye bakış açısını etkiler.
B. İnsanın davranışlarını tayin eden en önemli gerçek, davranışları ortaya çıkaran uyarıcılardır.
C. İnsanların temel gereksinimleri, bireylerin davranışlarını değiştirme sürecinde etkilidir.
D. İnsanın davranışları hem dış uyarıcılardan hem de kendi öznel dünyasından etkilenir.
E. İnsan davranışlarının gerisinde, o kişiye özgü bir mantık ve anlam bulunur.

35. "Öğretme-öğrenme sürecinde öğrencilerin öğretmeni bir birey olarak görmelerini sağlayan, öğretmenin öğrencilere kişisel olarak üzerlerine gitmelerini ve öğrencilerin davranışlarını savunmalarını önleyen ben iletilerinin kullanılmasını" öneren İnsancıl (Hümanistik) öğrenme yaklaşımına dayalı bu görüş kime aittir?
   A. Combs
   B. Maslow
   C. Purkey
   D. Rogers
   E. Thomas Gordon

36. Aşağıdakilerden hangisi eğitimde İnsancıl (Hümanistik) yaklaşımı savunan Maslow'a ait olmayan görüşlerden biridir?
   A. Her bireyin kendine özgü öznel bir doğaya sahip olduğu bilinmelidir.
   B. Bireyler kendi davranışlarını kontrol etmelerine olanak tanınmalıdır.
   C. Bireylerin kendi kararlarını almalarına izin verilmelidir.
   D. Bireylerin temel gereksinimleri göz önünde bulundurulmalıdır.
   E. Her bireyin olayları farklı yönleriyle de algılamaları sağlanmalıdır.

37. İnsancıl (Hümanistik) öğrenme yaklaşımına göre bir eğitim-öğretim ortamı oluşturulacaksa, aşağıdakilerden hangisi göz önünde bulundurulmalıdır?
   A. Öğrencilere öğretme-öğrenme sürecinde seçme hakkı tanınması
   B. Öğrenciler arasında rekabetin sağlanması
   C. Öğrenci başarılarının sınava dayalı olarak değerlendirilmesi.
   D. Öğrencilerin bireysel çalışmalarının sağlanması
   E. Sınıf yönetiminde pekiştireç ve cezadan yararlanılması

38. "Bir çocuğun annesini üzmemek için derslerinde başarı göstermeye çabalaması örneğinde olduğu gibi bir amaca ulaşmak için bireyin eylemde bulunma isteği" tanımı aşağıdaki kavramlardan hangisine aittir?
   A. Güdü
   B. Güdülenme
   C. İçsel güdülenme
   D. Pekiştireç
   E. Pekiştirme

39. Bireyin güdülenmesi için temel gereksinimlerinin ve ihtiyaçlarının giderilmesi gerektiğini savunan yaklaşım aşağıdakilerden hangisidir?
   A. Bilişsel
   B. Davranışçı
   C. Gestalt
   D. Hümanistik
   E. Sosyal öğrenme

40. Öğretmen olduğunuz zaman, öğrencilerinizin derse güdülenmesini istiyorsanız, aşağıdakilerden hangisini yapmanız doğru olmaz?
   A. Öncelikle öğrencilerin temel gereksinimlerini karşılama
   B. Öğrencilerin meraklarını uyandıracak etkinliklere yer verme
   C. Sorumlulukları ve görevleri çalışkan öğrencilere verme
   D. Başarı yada başarısızlığı, gösterilen çaba ile ilişkili olarak değerlendirme
   E. Eğitim-öğretim ortamını öğrencilerin ilgi, ihtiyaç ve hedeflerine göre düzenleme

CALIFORNIA CRITICAL THINKING DISPOSITION INVENTORY (CCTDI)

TURKISH VERSION[6]

Sevgili öğrenciler,

Bu ölçek, sizlerin eleştirel düşünme eğiliminizi ölçmek amacıyla geliştirilmiş bir ölçektir. Bu ölçekte 51 ifade bulunmaktadır. Aşağıdaki ifadelerin sizi ne kadar tanımladığını düşünerek, bu ifadelere ne ölçüde katıldığınızı aşağıdaki ölçek üzerinde değerlendiriniz.Değerlendirmelerinizi sizi tam olarak yansıtacak şekilde yapınız.

Katkılarınızdan dolayı teşekkür ederim.
Öğr. Gör. Banu Yücel Toy

Adı ve Soyadı: **Numarası:**

1	2	3	4	5	6
Hiç Katılmıyorum	*Katılmıyorum*	*Kısmen Katılmıyorum*	*Kısmen Katılıyorum*	*Katılıyorum*	*Tamamen Katılıyorum*

		Hiç Katılmıyorum	Katılmıyorum	Kısmen Katılmıyorum	Kısmen Katılıyorum	Katılıyorum	Tamamen Katılıyorum
1.	Tüm hayatım boyunca yeni şeyler çalışmak harika olurdu.	1	2	3	4	5	6
2.	İnsanların iyi bir düşünceyi savunmak için zayıf fikirlere güvenmeleri beni rahatsız eder.	1	2	3	4	5	6
3.	Cevap vermeye kalkışmadan önce, her zaman soruya odaklanırım.	1	2	3	4	5	6
4.	Büyük bir netlikle düşünebilmekten gurur duyuyorum.	1	2	3	4	5	6
5.	Dört lehte, bir aleyhte görüş varsa, lehte olan dört görüşe katılırım.	1	2	3	4	5	6

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[6] The Turkish adapted version of CCTDI was used with the permission of Assist. Prof. Dr. Doğan Kökdemir.

	Hiç Katılmıyorum	Katılmıyorum	Kısmen Katılmıyorum	Kısmen Katılıyorum	Katılıyorum	Tamamen Katılıyorum
6. Pek çok üniversite dersi ilginç değildir ve almaya değmez.	1	2	3	4	5	6
7. Sadece ezberi değil düşünmeyi gerektiren sınavlar benim için daha iyidir.	1	2	3	4	5	6
8. Diğer insanlar entellektüel merakımı ve araştırıcı kişiliğimi takdir ederler.	1	2	3	4	5	6
9. Mantıklıymış gibi davranıyorum, ama değilim.	1	2	3	4	5	6
10. Düşüncelerimi düzenlemek benim için kolaydır.	1	2	3	4	5	6
11. Ben dahil herkes kendi çıkarı için tartışır.	1	2	3	4	5	6
12. Kişisel harcamalarımın dikkatlice kaydını tutmak benim için önemlidir.	1	2	3	4	5	6
13. Büyük bir kararla yüzyüze geldiğimde, ilk önce, toplayabileceğim tüm bilgileri toplarım.	1	2	3	4	5	6
14. Kurallara uygun bir biçimde karar verdiğim için, arkadaşlarım karar vermek için bana danışırlar.	1	2	3	4	5	6
15. Açık fikirli olmak neyin doğru olup olmadığını bilmemek demektir.	1	2	3	4	5	6
16. Diğer insanları çeşitli konularda neler düşündüklerini anlamak benim için önemlidir.	1	2	3	4	5	6
17. İnandıklarımın tümü için dayanaklarım olmalı.	1	2	3	4	5	6
18. Okumak, mümkün olduğunca, kaçtığım bir şeydir.	1	2	3	4	5	6
19. İnsanlar çok acele karar verdiğimi söylerler.	1	2	3	4	5	6
20. Üniversitedeki zorunlu dersler vakit kaybıdır.	1	2	3	4	5	6
21. Gerçekten çok karmaşık bir şeyle uğraşmak zorunda kaldığımda benim için panik zamanıdır.	1	2	3	4	5	6
22. Yabancılar sürekli kendi kültürlerini anlamaya uğraşacaklarına, bizim kültürümüzü çalışmalılar.	1	2	3	4	5	6
23. İnsanlar benim karar vermeyi oyaladığımı düşünürler.	1	2	3	4	5	6
24. İnsanların, bir başkasının fikirlerlerine karşı çıkacaklarsa, nedenlere ihtiyacı vardır.	1	2	3	4	5	6
25. Kendi fikirlerimi tartışırken tarafsız olmam imkansızdır.	1	2	3	4	5	6
26. Ortaya yaratıcı seçenekler koyabilmekten gurur duyarım.	1	2	3	4	5	6

	Hiç Katılmıyorum	Katılmıyorum	Kısmen Katılmıyorum	Kısmen Katılıyorum	Katılıyorum	Tamamen Katılıyorum
27. Neye inanmak istiyorsam ona inanırım.	1	2	3	4	5	6
28. Zor problemleri çözmek için uğraşmayı sürdürmek o kadar da önemli değildir.	1	2	3	4	5	6
29. Diğerleri, kararların uygulanmasında mantıklı standartların belirlenmesi için bana başvururlar.	1	2	3	4	5	6
30. Zorlayıcı şeyler öğrenmeye istekliyimdir.	1	2	3	4	5	6
31. Yabancıların ne düşündüklerini anlamaya çalışmak oldukça anlamlıdır.	1	2	3	4	5	6
32. Meraklı olmam en güçlü yanlarımdan birisidir.	1	2	3	4	5	6
33. Görüşlerimi destekleyecek gerçekleri ararım, desteklemeyenleri değil.	1	2	3	4	5	6
34. Karmaşık problemleri çözmeye çalışmak eğlencelidir.	1	2	3	4	5	6
35. Diğerlerinin düşüncelerini anlama yeteneğimden dolayı takdir edilirim.	1	2	3	4	5	6
36. Benzetmeler ve anolojiler ancak otoyol üzerindeki tekneler kadar yararlıdır.	1	2	3	4	5	6
37. Beni mantıklı olarak tanımlayabilirsiniz.	1	2	3	4	5	6
38. Herşeyin nasıl işlediğini anlamaya çalışmaktan gerçekten hoşlanırım.	1	2	3	4	5	6
39. İşler zorlaştığında, diğerleri problem üstünde çalışmayı sürdürmemi isterler.	1	2	3	4	5	6
40. Elimizdeki sorun hakkında açık bir fikir edinmek ilk önceliklidir.	1	2	3	4	5	6
41. Çelişkili konulardaki fikrim genellikle en son konuştuğum kişiye bağlıdır.	1	2	3	4	5	6
42. Konu ne hakkında olursa olsun daha fazla öğrenmeye heveslıyimdir.	1	2	3	4	5	6
43. Sorunları çözmenin en iyi yolu, cevabı başkasından istemektir.	1	2	3	4	5	6
44. Karmaşık problemlere düzenli yaklaşımımla tanınırım.	1	2	3	4	5	6
45. Farklı dünya görüşlerine karşı açık fikirli olmak, insanların düşündüğünden daha az önemlidir.	1	2	3	4	5	6
46. Öğrenebileceğin herşeyi öğren, ne zaman işe yarayacağını bilemezsin.	1	2	3	4	5	6
47. Herşey göründüğü gibidir.	1	2	3	4	5	6

		Hiç Katılmıyorum	Katılmıyorum	Kısmen Katılmıyorum	Kısmen Katılıyorum	Katılıyorum	Tamamen Katılıyorum
48.	Diğer insanlar, sorunun ne zaman çözümleneceği kararını bana bırakırlar.	1	2	3	4	5	6
49.	Ne düşündüğümü biliyorum, o zaman neden seçenekleri değerlendiriyor gibi davranayım.	1	2	3	4	5	6
50.	Diğerleri kendi fikirlerini ortaya koyarlar, ama benim onları duymaya ihtiyacım yok.	1	2	3	4	5	6
51.	Karmaşık problemlerin çözümüne yönelik düzenli planlar geliştirmede iyiyimdir.	1	2	3	4	5	6

APPENDIX L

FOCUS GROUP INTERVIEW QUESTIONS

Tarih ve zaman (Başlama ve Bitiş):
Cinsiyet:
Yaş:

GİRİŞ

*Merhaba, **Gelişim ve Öğrenme** dersinin değerlendirilmesi ile ilgili bir doktora çalışması yapıyorum.Bu dersi almış olan öğrencilerle bu konuda düşüncelerini almak amacıyla görüşmeler yapıyorum.Bu araştırmadan elde edilen bilgiler bu dersin etkililiğinin değerlendirilmesinde yardımcı olacağını umuyorum. Ayrıca, elde edilen bilgilerin Fakültenin öğretmenlik eğitim alanındaki diğer derslerin de geliştirilmesine destek olacağını düşünüyorum. Bu sebeplerden dolayı, bu ders ile ilgili sizin kişisel bilgilerinize ihtiyacım var.*

Başlamadan once, bazı noktalara açıklık getirmek istiyorum:
- ➤ *Görüşmenin yaklaşık olarak 45 dakikanızı alacağınızı düşünüyorum.*
- ➤ *Bu görüşme boyunca söylediğiniz herşey gizli kalacaktır. Elde edilen bilgiler hiçkimseye iletilmeyecektir ve açıklanan hiçbir bilgi üzerinde isimleriniz belirtilmeyecektir.*
- ➤ *Görüşme sırasında istediğiniz zaman soru sormakta ve görüşmeyi sonlandırmakta özgürsünüz.*
- ➤ *Başlamadan önce sormak istediğiniz başka bir soru var mı?*
- ➤ *İzin verirseniz görüşme sırasındaki konuşmaları kaydetmeyi istiyorum. Bu şekilde, hem zamanı daha etkili kullanabiliriz, hem de görüşmeden sonra cevaplarınızı daha detaylı analiz edebilirim. Herhangi bir rahatsızlık duyduğunuz taktirde kaseti ve görüşme notlarını alabilirsiniz. Sizce de uygun mudur?*
- ➤ *Bu araştırmaya katılmayı kabul ettiğiniz ve zaman ayırdığınız için teşekkür ederim.*

GENEL SORULAR
1. Hangi liseden mezun oldunuz?
2. Bu fakülteyi tercih etme sebebiniz nedir?
3. Peki, öğretmen olmayı istiyor musunuz? Neden?
4. Gelişim ve Öğrenme dersinden aldığınız not nedir?
5. Size göre, Gelişim ve Öğrenme dersi öğretmenlik mesleği için faydalı bir ders midir? Neden?

GÖRÜŞME SORULARI:
1. Siz bu dersi alırken temel beklentileriniz nelerdi?

2a. Bu beklentilerinizin ne derecede karşılandığını yada karşılanmadığını düşünüyorsunuz?
2b. Size göre, beklentilerinizin karşılanma yada karşılanmama sebepleri neler olabilir?

3a. Size göre, bu ders öğretmen olmanız için size değerli ve önemli katkılar sağladı mı?
3b.(Hayırsa) Neden?
3b.(Evetse) Nelerdir? Öğretmen olduğunuz zaman bu bilgileri nasıl kullanmayı düşünüyorsunuz?

4a. Gelişim ve Öğrenme dersi kapsamında ele alınan konuların, öğretmenlik eğitiminiz için gerekli olup olmadığı ile ilgili görüşlerinizi almak istiyorum. Size sırası ile bu konuları söyleyeceğim. Lütfen bu sayacağım konuların her biri için gerekli mi yoksa gereksiz mi bulduğunuzu ve nedenlerini söyleyiniz.

	Gerekli	Gereksiz	Neden?
Gelişim ve Öğrenme ile ilgili temel kavramlar			
Fiziksel gelişim			
Bilişsel gelişim			
Dil gelişimi			
Ahlaki gelişim			
Kişilik gelişim			
Davranışçı öğrenme yaklaşımı: Klasik Koşullanma			
Edimsel Koşullanma			
Sosyal öğrenme kuramı			
Bilişsel öğrenme yaklaşımı: Gestalt kuramı			
Bilgiyi işleme kuramı			
Yapılandırmacılık			
Hümanistik (İnsancıl) öğrenme yaklaşımı			
Güdülenme			

4b. (Konular içerisinde "Gereksiz" olduğunu düşünenler olursa). Burada gereksiz diye belirttiğiniz konular için neden böyle düşündüğünüzü açıklar mısınız?
4c. Burada saydıklarım dışında, başka hangi konuların işlenmesini isterdiniz? Neden?

5a. Şimdi sizin, bu saydığım konularda kendinizi ne derece yeterli gördüğünüz ile ilgili düşüncelerinizi almak istiyorum. Şimdi sayacağım konuların her biri için kendinizin yeterlilik düzeyinizi derecelendirmenizi istiyorum. Lütfen bu derecelendirmeyi yaparken kendinizi "Çok yeterli" mi, "Yeterli" mi, "Az yeterli" mi yoksa "Yetersiz" mi görüyorsunuz, sadece birini söyleyiniz.

	Çok yeterli	Yeterli	Az Yeterli	Yetersiz
Gelişim ve Öğrenme ile ilgili temel kavramlar				
Fiziksel gelişim				
Bilişsel gelişim				
Dil gelişimi				
Ahlaki gelişim				
Kişilik gelişim				
Davranışçı öğrenme yaklaşımı: Klasik Koşullanma				
Edimsel Koşullanma				
Sosyal öğrenme kuramı				
Bilişsel öğrenme yaklaşımı: Gestalt kuramı				
Bilgiyi işleme kuramı				
Yapılandırmacılık				
Hümanistik (İnsancıl) öğrenme yaklaşımı				
Güdülenme				

5b. Kendinizi yeterli gördüğünüz konularda yeterli olmanızın sebepleri size göre nelerdir ya da neler olabilir?

5c. Kendinizi yetersiz gördüğünüz konularda bu yetersizliğinizin sebepleri size göre nelerdir ya da neler olabilir?

6a. Ders süresince, ne derecede ve ne şekilde derse katılım gösteriyordunuz?
İpucu: Sınıf içi etkinliklerde, soru sorma veya cevap vermede ne derecede katılım gösteriyordunuz?
6b. Neden?

7a. Derste yer alan etkinliklerin (sınıf içi-dışı etkinlikler) ya da dersin işleniş şeklinin düşünme becerinizi ne derecede geliştirdiğini düşünüyorsunuz?
İpucu: Derste yer alan etkinlikler sizi ne derecede düşündürmeye yönelten etkinlikdi?
7b. (Olumlu ise) Nasıl? Bir örnek verebilir misiniz?
7b. (Olumsuz ise) Neden?

8a. Derste kullanılan kaynaklar ve materyaller hakkında neler düşünüyorsunuz?
İpucu: Kitap, asetat, makale, slayt, film, örnek olay çalışma yaprakları, vb.
İpucu: Ne derecede yararlı idi?
       Ne derecede konuların anlaşılabilirliğini sağladı?
       Ne derecede pratik ve kullanılabilirlerdi?
8b. Peki, başka ne tür materyaller kullanılabilirdi?

9a. Derste öğrenci başarısının değerlendirilmesinde kullanılan yöntemler sizce yeterli miydi?
9b. Neden?

9c. Başka ne tür yöntemler öğrenci başarısının değerlendirilmesinde kullanılabilirdi?

10. Size bu dersi tekrar alabilme ya da geriye gitme imkanı verilmiş olsa bu dersin nasıl işlenmesini isterdiniz?
Alternatif Soru: Bu dersin bir ders saati boyunca başından sonuna nasıl işlenmesini isterdiniz?
İpucu: Hangi öğretim yöntemleri, teknikleri yada stratejileri bu derste kullanılmış olsaydı daha iyi olurdu?

11. Bu dersin en çok etkili bulduğunuz üç yönünü söyleyebilir misiniz?

12. Bu dersin en olumsuz olduğunu düşündüğünüz üç yönünü söyleyebilir misiniz?

13.Gelişim ve Öğrenme dersinin geliştirilmesi ile ilgili eklemek istediğiniz başka beklenti ve önerileriniz var mı?

Katılımız için teşekkür ederim.

SYLLABUS

GELİŞİM VE ÖĞRENME
2006-2007 GÜZ DÖNEMİ
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Dersin Hedefleri
Bu dersin genel hedefi, öğretmen adaylarının öğrencilerin Gelişim ve Öğrenme süreçleri ilgili bilgi sahibi olmaları ve bu bilgileri eğitim-öğretim ortamlarında uygulayabilme becerilerine sahip olmalarıdır.

- ♦ Gelişim ve öğrenme ile ilgili temel kavramları tanımlayabilme
- ♦ Gelişim ile ilgili temel ilkeleri kavrayabilme
- ♦ Gelişim kuramlarına göre gelişim süreçlerinin özelliklerini kavrayabilme
- ♦ Öğrenme kuramlarının özelliklerini kavrayabilme
- ♦ Öğrenme kuramlarının ilkelerini kavrayabilme
- ♦ Kuramlarına göre öğrenmenin oluşum sürecini açıklayabilme
- ♦ Farklı kuramlara göre güdülenme sürecini açıklayabilme
- ♦ Aynı alan ile ilgili farklı kuramları/yaklaşımları karşılaştırabilme
- ♦ Kuramlarının öğretme-öğrenme ortamlarında uygulanışını kavrayabilme

Dersin içeriği
1. Hafta: Tanıtım
2. Hafta: Gelişim ile ilgili temel kavramlar
3. Hafta: Fiziksel Gelişim
4. Hafta: Bilişsel Gelişim ve Dil Gelişimi
5. Hafta: Ahlaki Gelişim
6. Hafta: Kişilik Gelişimi
7. Hafta: Vize
8. Hafta: Gelişim Kuramlarının Gözden Geçirilmesi ve Öğrenme ile ilgili Temel Kavramlar
9. Hafta: Davranışçı Yaklaşım Kuramları: Klasik ve Edimsel Koşullanma
10. Hafta: Davranışçı Yaklaşım Kuramları: Sosyal Bilişsel Öğrenme Kuramı
11. Hafta: Bilişsel Yaklaşım Kuramları: Gestalt Kuramı ve Bilgiyi İşleme Kuramı
12. Hafta: Bilişsel Yaklaşım Kuramları: Yapılandırmacılık Kuramı
13. Hafta: Humanistik Yaklaşım Kuramları ve Öğrenme Kuramlarının Gözden Geçirilmesi
14. Hafta: Güdülenme (İçsel ve dışsal güdülenme, güdülenme ile ilgili kuramlar)

Dersin öğretme-öğrenme süreci
Bu ders, daha önce aldığınız derslerden farklı olarak sizlerin eleştirel düşünme becerilerinizi kullanmanızı sağlayacak şekilde tasarlanmıştır. Des içi ve dışı etkinliklerde, sizlerden devamlı olarak düşüncelerinizi katmanız beklenmektedir. Gelişim ve öğrenme alanında bilgileri ezberlemektense, bu bilgileri eğitimsel bir mantık içerisinde ve kendi mantıksal düşünce becerinizle birleştirerek öğrenmeniz amaçlanmaktadır. Bu sebeplerden dolayı sizlere daha çok sorumluluk düşmektedir. Bu ders kapsamında yer alan etkinlikler çoğunlukla okumaya, yazmaya ve uygulamaya dayalı etkinlikler olacaktır.

Dönem boyunca sınıf içerisinde ve dışında gerçekleştirilecek çalışmalar:

♦ Grup çalışması: Etkinliklerde grup çalışmalarından da yararlanılacağı için dönem başında öğrencilerin akademik not ortalamalarına gore 5 kişilik gruplar oluşturulacaktır. Sınıf içi gerçekleştirilecek etkinlikler çoğunlukla grup çalışmaları olacaktır. Bunun yanısıra Drama çalışmalarına da yer verilecektir ve her grubun bir drama çalışması sergilemesi gerekmektedir.

♦ Ders ön çalışma formu: Bu çalışma organize şemalar (kavram haritaları da kullanılabir) yardımıyla dersten önce hazırlanması gereken ve işlenecek konunun şemalar veye kavram haritası yardımıyla özetinin çıkarıldığı veya anlamsal ilişkilerinin kurulduğu bir çalışmadır.

♦ Günlük: Bireysel olarak yapılan herkesin o günkü işlenen dersi, öğretmeni ve kendi performansını değerlendirdiği bir çalışmadır.

♦ İzleme Testleri: Dönem içerisinde derslerin sonunda veya konuların bitiminde test yapılacaktır.

♦ Ödevler: Konu bitiminde öğrencilere ödev verilecektir. Bunlar değişik çalışmaları içerecektir. Poster hazırlama, örnek olay inceleme, gözlem yapma veya öğretim elemanı tarafından veya sınıf içerisindeki tartışma sonucu ortaya atılan soruların cevaplandırılması, vb.

Dönem boyunca sürdürülüp dönem sonunda teslim edilecek çalışmalar

♦ Makale değerlendirilmesi: Bireylerin gelişim ve öğrenmelerine yönelik bir makale bulunuz ve size verilecek kriterlere göre değerlendirip yazılı bir rapor olarak teslim ediniz. Bu çalışma, önce arkadaşlarınız tarafından değerlendirilecek alınan yorumlar çerçevesinde yazdığınız değerlendirme çalışmasının üzerinden gidip son halini dersin öğretim elemanına teslim ediniz.

♦ Proje: Her grup dönem boyunca eğitim alanı ile ilgili ilgilenmek istedikleri eğitim ve öğretim ile ilgili bir problem belirleyip bu çerçevede bir proje gerçekleştirilecektir. Her hafta belirlenen ofis saatlerinde bu proje ile ilgili çalışmalara öğretim elemanı rehberlik edecektir. Dönem sonunda proje sonuçları ile ilgili bir rapor hazırlanıp öğretim elemanına teslim edilecek ve sınıfta sunum yapılacaktır.

♦ Portfolyo: Her öğrenci bir portfolyo hazırlayacaktır. Dönem boyunca yürütülen tüm çalışmalar portfolyoda yer alacaktır.

Bireysel veya grupla gerçekleştirilecek bu çalışmalara herkesin aktif katılması gerekmektedir. Derse devam zorunludur.

Ölçme ve Değerlendirme

Vize	% 15
İzleme testi	% 10
Makale incelemesi	% 7,5
Ders içi katılım	% 7,5
Portfolyo	% 20
Final	% 40

Yararlanılacak Kaynaklar:

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APPENDIX N

LESSON PLAN EXAMPLE

The topic: Cognitive Development
Subtopics: Basic characteristics of Piaget's and Vygotsky's theory of cognitive development, educational implications of the theories
The hour: 3 hours
Teaching strategies: Socratic questioning, case study
The Materials: Pictures, Slides, Projector
The instructional objectives:
The students will be able
to know cognitive development processes as to Piaget and Vygotsky
to explain Piaget's and Vygotsky's theories regarding cognitive development
to compare Piaget's and Vygotsky's views regarding cognitive development
to follow students' cognitive development process
to understand individual differences among students' cognitive development
to help students' cognitive development
to prepare educational environment towards improving sts congitive development level

Critical thinking strategies
S-11 Comparing analogous situations: transfering insights to new contexts
S-12 Developing one's perspective: creating or exploring beliefs, arguments, or theories
S-14 Clarifying and analyzing the meanings of words or phrases
S-20 Analyzing or evaluating actions or policies
S-29 Noting significant similarities and differences
S-35 Exploring implications and consequences

I. Lesson introduction
The students will be informed about the topics covered in that session and instructional objectives regarding cognitive development.

a. Regarding the topic "basic characteristics underlying the Piagetian theory of cognitive development"

IIa. The open-ended phase
The following questions will be directed to the students.
1. How do persons develop a meaning of a concept?
2. For example, what does "cat or cow" mean to you (their picture will be shown on the slides)? Why do you explain them in this way? From where does this information come?
3. Have you known them since you were born? How did you learn them?
4. Let's assume you encounter a mobile phone or mp3 player that you have never seen, how do you learn to use them? **S-12**

IIIa. The convergent phase
In addition to the preceding questions, by asking;
1. What could be the cognitive operations while learning a new concept, characteristics, principles, or procedure that we do not know?
2. What could be the cognitive operations if we already know the given concept, characteristics, principles, or procedure?
The students will be directed to find out the concepts underlying the cognitive operations; schema, assimilation, accommodation and equilibration, and their definitions. **S-14**
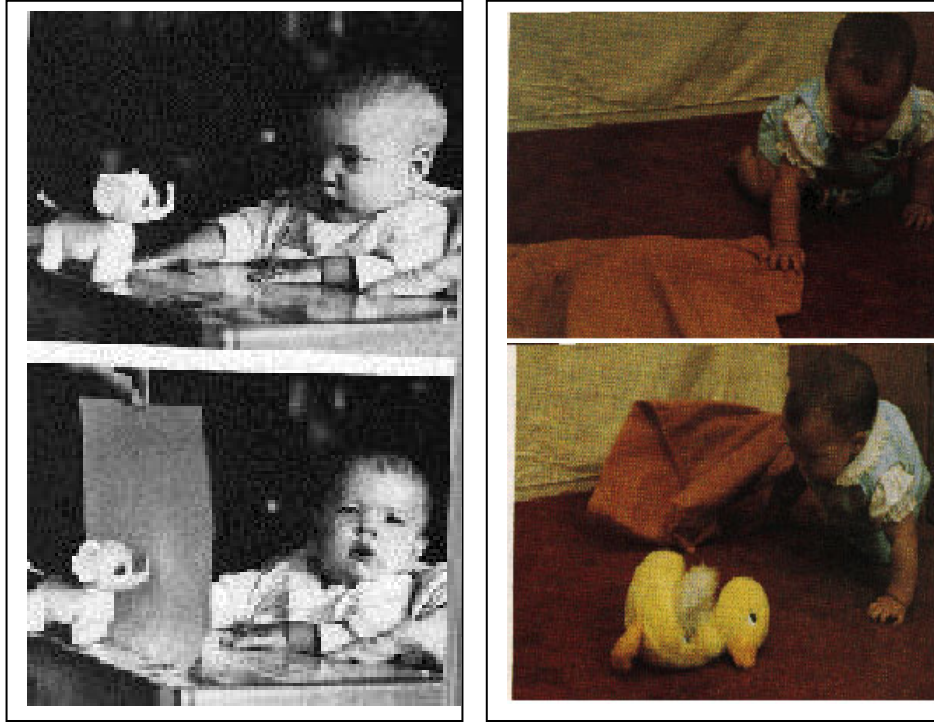
IVa. The Closure
Finally, the students will summarize the concepts and their definitions.

b. Regarding the topic "the characteristics of the Piagetian Cognitive Development Stages"

IIb. The open-ended phase
Sensory-motor stage
The following picture will be displayed and the following questions will be asked.

1. Why is this stage called as sensory-motor? **S-14**
2. How babies develop concepts of objects? What are their characteristics affecting their conception? **S-12**
3. Could you describe what happens in these pictures? What are the differences? **S-29** are asked to define the cognitive characteristic "permanence of objects".

The other stages
The previous week, an assignment will have been given to the students. They will have been supposed to ask the definition of 6 concepts that will have been determined previous week by the class to the persons from different age groups; pre-school, elementary school and high school students. The instructor will ask them to explain the answers they obtained.

The following questions will be asked and discussed regarding the answers:
1. Are there differences between age groups? Why do their answers differentiate between groups? What are the differences? Are there similarities within groups? Why do they resemble within groups? **S-29**
2. What are the similarities in the answers given by pre-school students? **S-29** What could be their cognitive characteristics based on these answers and you observations in your life? Could you exemplify them? **S-12**
3. Could you describe the following picture?

4. What could the cognitive factors affecting their perception be? **S-12**
5. What are the similarities in the answers given by elementary school students? **S-29** Based on these answers and your observations in your life, what could be the cognitive characteristics of the concrete operations stage, which is corresponding to this age group? Could you exemplify? **S-12**
6. What are the similarities in the answers given by high school students? **S-29** What are your cognitive skills? Based on the answers, your observations in your life and your own cognitive characteristics, what are the features of the formal operations stage which is corresponding to this age group? Could you exemplify? **S-12**

IIIb. The convergent phase

Through these questions, the students will be led to describe the cognitive characteristics of the age groups; that is, the characteristics of the sensory-motor, preoperational, concrete operations and formal operations stages.

IVb. Closure

They will sum up the characteristics of each stage.

c. Regarding the topic "the Vygotsky's View of Cognitive Development"
IIc. The open-ended phase

The following questions will be asked.

1. Do we learn anything from adults? How? How do they transfer knowledge to us?
2. How we learn from them?
3. What factors do affect? How?
4. How do you learn better individually or guided by the teacher?
5. How can guidance be effective in learning? Why? **S-12**

IIIc. The convergent phase

With these questions, the students will be directed to describe the key characteristics of Vygotsky's view of cognitive development.
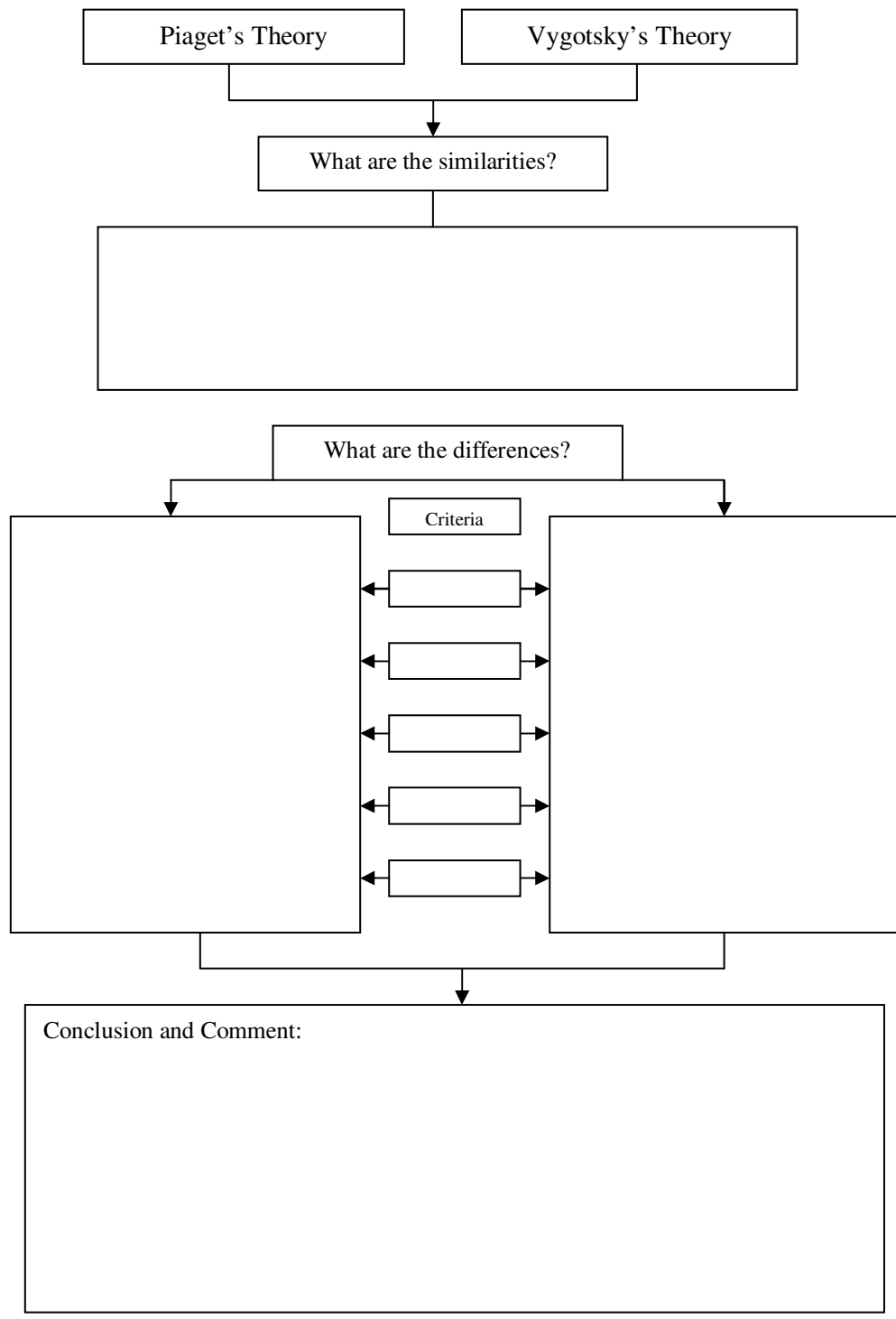
IVc. Closure

The students will be requested to summarize Vygotsky's view and its characteristics: social interaction, language, the zone of proximal development.

V. The application phase.

The student will discuss the educational implications of the cognitive development theories **S-35**. Then they will be asked to compare the characteristics of Piaget' and Vygotsky's cognitive development theories individually. The following graphic organizer[7] will be used. **S-29**

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[7] This graphic organizer was adapted from the National Center for Teaching Thinking (1999) in which all information provided is reprinted from the lesson design handbook series on Infusing the Teaching of Critical and Creative Thinking into Content Instruction by Robert Swartz, Stephen David Fischer, and Sandra Parks.

Piaget's Theory	Vygotsky's Theory

What are the similarities?

What are the differences?

Criteria

Conclusion and Comment:

A case study analysis will be given as homework.

BİLİŞSEL GELİŞİM
ÖRNEK OLAY ETKİNLİĞİ

"EMEL ÖĞRETMENİN FEN BİLGİSİ DERSİ"

Emel öğretmen, ilköğretim 1.Sınıf öğrencilerini bir masanın etrafında toplamış fen dersine başlamaya hazırlanıyordu. Herkes yerleştikten sonra, "Bugün, hepimiz bilim adamı olacağız. Bilim adamları dünyayı anlamak için duyularını kullanırlar." diye öğrencilerine seslendi.

Daha sonra öğretmen öğrencilerine örnekler vermelerini isteyerek 5 duyunun neler olduğunu kısaca tekrar etti. Sonra İlknur'a dönerek, "Birşeyin gerçek olup olmadığını nasıl bilirsin, İlknur?" diye sordu.

İlknur cevap veremeyince, Emel öğretmen elindeki kaşığı havaya kaldırarak, "İlknur, bu gerçek mi?" diye sordu. İlknur başını salladı. Emel öğretmen devam etti.

"Peki, nereden biliyorsun?"

"......"

"Bu nedir?"

"...Bir yemek kaşığı"

" Bunun bir yemek kaşığı olduğunu nereden biliyorsun?" diye Emel öğretmen tekrar sordu. Bazı düşüncelerden sonra, öğrenciler kaşığa dokunabildikleri, görebildikleri ve hatta tadına bakabildikleri konusunda karar verdiler. Daha sonra Emel öğretmen, Ali'ye dönüp, "Peki hava gerçek midir?" diye sordu.

"Evet, çünkü biz onu nefesimizle içimize alabiliyoruz" diye cevap verdi Ali.

Emel öğretmen bu sefer, "Peki biz onu görebiliyor muyuz?" diye sordu. Öğrenciler bir an için düşündüler ve hayır anlamında başlarını salladılar.

"Bir süreliğine hava ile ilgili bir düşünelim" dedi öğretmen, sonra su dolu küçük bir fanus gösterdi. "Ne görüyorsunuz?"

"Bir kap içinde su" diye cevap verdiler.

"İçindekinin su olduğundan emin misiniz?"

Öğrenciler nasıl cevap vereceklerini bilemediler.

" İçindekinin su olup olmadığını nasıl anlayabilirsiniz?"

"Hareket ediyor" dedi Gülcan.

"Başka neler söyleyebilirsiniz?"

Bir cevap alamayınca, Emel öğretmen devam etti. "Eğer bunu içseydiniz, su olup olmadığını bilebilir miydiniz?" Öğrencileri bilmedikleri sıvıları içmemeleri konusunda uyardıktan sonra, bu sıvının güvenilir olduğunu öğrencilerine söyledi. Bunun üzerine bir öğrenci geldi, parmağını suya soktu ve "Evet bu su!" dedi. Emel öğretmen, boş bir bardağı kaldırdı ve ne olduğunu sordu. Öğrencilerine bir bardağın farklı özelliklerini tanımlayabilmek için görme duyularını kullanmalarını söyledikten sonra öğrencilere dönerek, "Elimdeki bardağı, ağzı aşağıda kalacak şekilde suyun içine koyacağım. Sence ne olacak, ne düşünüyorsun, Budak?"

"Su, bardağın içine girecek"

"Hayır, bardak kuru kalacak" dedi Arzu.

Bu iki görüş arasındaki farklılığı göstermek için Emel öğretmen sınıfa kaç kişinin bardağın ıslanacağını, kaç kişinin kuru kalacağını ve kaç kişinin çekimser olduğunu sordu. "Öyleyse, görelim bakalım ne olacak?" dedi. "İlk önce bardağın kuru olduğundan emin olalım. Hakan, sen çok emin değildin. Gelip bardağın kuru olup olmamadığı konusunda bana yardım etmeni istiyorum. Nasıl hissediyorsun? Kuru mu?"

Bardağın içine parmağını sokup kuruluğuna baktıktan sonra "Evet" dedi Hakan. Daha sonra Emel öğretmen, sınıfa bardağı ters çevrilmiş bir halde suyun içine koyarken dikkatlice izlemelerini söyledi.

"Şimdi bardağın hepsi suyun içinde mi?"

Bütün sınıf onayladı. Hakan, "İçinde su var. Ben içindeki suyu görebiliyorum" diye seslendi.

"Eğer öyleyse, ben bardağı çıkardığımda ne olacak?" dedi öğretmen.

"Islak" diye cevap verdi Hakan.

Öğretmen, bardağı dikkatlice suyun içinden çıkardıktan sonra Hakan'ı bardağın içinin kuru olup olmadığını kontrol etmesi için yanına çağırdı.

"Ne hissediyorsun?"

"Islak"

Emel öğretmen şaşırdı, çünkü normalde bardağın kuru olması gerekiyordu. Bir saniye durduktan sonra, "Arzu, sen de buraya gelip kontrol eder misin?" dedi. Arzu parmağını bardağın içine soktuktan sonra, "Bardağın dışı ıslak fakat içi kuru" dedi. "Hayır ıslak" diye ısrar etti Hakan.

Bir süre ilgili bir bakış attıktan sonra, öğretmen " Ooo! İki farklı görüş var. Bu problemi nasıl çözeceğimizi bulmamız gerek" dedi.

"Bardağı kurulayıp deneyi tekrarlayalım. Fakat, bu sefer içine kağıt havlu koyalım. Şimdi, eğer bardağın içine su girerse, kağıt havluya ne olur?"

Sınıf kağıt havlunun ıslak hem de ıpıslak olacağını söyledi. Öğretmen, bardağı havaya kaldırarak, herkesin bardağın kuru olduğunu görmesini sağladı.

"Tamam, bardak kuru, kağıt havlu içinde. Bardağı şimdi tekrar suyun içine koyalım ve bakalım ne olacak?"

Bütün sınıf dikkatlica öğretmeni izledi. Öğretmen bardağı suyun içinde birkaç saniye beklettikten sonra dikkatlice çıkardı.

"Tamam, Elif, buraya gel ve kağıt havluyu kontrol et ve bize ıslak mı yoksa kuru mu olduğunu söyle."

"Elif, kağıt havluyu elledi ve bir saniye düşündükten sonra "Kuru" dedi.

"Neden kuru kaldı? Neden kuru kaldığını söylecek olan varsa parmağını kaldırsın. Sen ne düşünüyorsun, Cenk?"

"Çünkü, kağıt havlu içerideydi"

"Fakat, Neden su bardağın içine girmedi? Ne suyun dışarıda kalmasını sağladı?....Ceren?"

"Bir su mührü"

"Bir su mührü mü? Hmmm...Suyun dışarıda kaldığı ile ilgili herşey ortada. Neden içine girmedi? Havlu nasıl kuru kaldı?"

Sessizce biri cevap verdi.

"Çünkü içinde hava vardı"

" Hava!Suyu dışarıda tutan şey bu muydu?" diye heyecanla sordu Emel öğretmen.

"Daha önce Arzu havuzda yüzerken bardağı suyun içine soktuğu zaman bardağın kuru kaldığını ama bardağı hafif yana yatırınca içinin ıslandığını söylemişti. Şimdi, eğer ben de bardağı suyun içerisine koyarsam ve sonra hafif yana yatırırsam, sizce ne olur? Ne düşünüyorsunuz?...Çınar?"

"Bardak ıslanacak"

"Görelim. Şimdi dikkatlice seyredin. Bakalım ne olacak?" diye sordu öğretmen suyun içine daldırdığı bardağı hafifçe yana yatırırken. "Akif?"

"Baloncuklar var"

"Akif, bu baloncuklar neyden oluşuyor?

"Bunlar hava baloncukları"

"Şimdi bardağa bak. Ne görüyorsunuz?" diye sordu sınıfa öğretmen.

"Bardağın alt tarafının yarısında su var."

"Peki ya üst yarısında ne var?"

"Kuru"

"Üstte ne var peki?"

"Hava"

"Üstte hava var. Peki ben bu havayı nasıl dışarı çıkarabilirim?"

"Biraz daha bardağı yana çevirin" diye bir kaç öğrenci seslendi. Öğretmen bu şekilde yaptığı zaman birkaç hava kabarcığı daha yüzeye çıktı.

"Arzu, bu nasıl oldu? Ben biraz daha bardağı yana çevirince, havanın dışarı çıkmasına ne sebep oldu?"

".....Su" diye kararsızca cevap verdi Arzu.

"Ben bardağı bu şekilde eğince (daha fazla su baloncuğu çıkana kadar çevirince), havanın dışarı çıkmasına ne sebep oluyor?"

Sınıfın bir bölümü hep bir ağızdan "Su" diye cevap verdi.

Buarada Emel öğretmen, su dolu bardağı sınıfa göstererek, "Sizin için başka bir deneyim daha var" dedi. "Bu bardağı ters çevirirsem ne olur?"

"Su dökülür ve etrafa yayılır" diye cevap verdi bazı öğrenciler.

Emel öğretmen, bardağın ağzını bir kart ile kapatırsa ve ters çevirirse ne olacağını sordu. Bazı öğrenciler suyun döküleceğini bazıları ise suyun bardağın içinde kalacağını söylediler.

Bunun üzerine, öğretmen bir kart ile bardağın ağzını kapattı ve ters çevirdi. Öğrenciler bardağın içindeki suyun dökülmediğini gördüler. Öğretmen öğrencilerden neden böyle olduğunu açıklamalarını istedi. Bir öğrenci, bardağın üzerindeki kartı korumak için suyun süper zamk işi gördüğünü söyledi. Biraz daha tartışıldıktan sonra, başka bir öğrenci havanın bardak üzerindeki kartın düşmesini engellediğini söyledi. Sınıf bir süre daha bunu tartıştıktan sonra, öğretmen öğrencilerini küçük çalışma gruplarına ayırdı. 4-5 kişilik her bir gruba bardak, su, kart ve kağıt vererek onlara deneylerini kendi kendilerine yapacaklarını söyledi. Gruptaki her bir öğrencinin kendi başına denemeyi yapmalarını sağladıktan sonra öğretmen tüm çocukları topladı ve ne bulduklarını gözden geçirip bir özet yaptılar.

Kaynak: Eggen ve Kauchak (1997)'tan uyarlanmıştır.

Yukarıdaki örnek olayı dikkatlice okuyunuz. Bu ünitede öğrendiklerinizi gözden geçiriniz ve aşağıdaki soruları işlenen konu ve örnek olaya dayalı olarak cevaplandırınız. **S-11, S-20**

1. Emel öğretmenin öğrencilerinin bilişsel düzeyi ne olabilir? Bu düzeydeki öğrenciler için öğretmenin öğretimi etkili miydi? Açıklayınız.
2. Suyun araç olarak kullanılması, Emel öğretmenin dersinde neden önemliydi? Bu durum Piaget'nin bilişsel gelişim dönemleri ile nasıl ilişkilendirilebilir?
3. Vygotsky'nin bilişsel gelişim kuramının temel özelliklerini Emel öğretmen kullandı mı? Nasıl?
4. Öğretmen, deneyi yaptıktan sonra bardağın kuru olup olmadığı ile ilgili olarak soru sorduğu Arzu ve Hakan arasındaki görüş farklılığını nasıl çözdü? Bu görüş farklılığını başka hangi yollarla da çözebilirdi? Sizce hangisi daha uygun olurdu? Neden?
5. Emel öğretmenin öğrencileri, bu derste yakınsal gelişim alanında mıydı? Emel öğretmen bu konuda onlara nasıl yardımcı oldu? Etkili miydi?
6. Emel öğretmen nasıl bir sosyal etkileşim ortamı yarattı?

APPENDIX O

EXAMPLES OF ACTIVITIES CARRIED OUT IN
THE TREATMENT GROUPS[8]

KONU: GELİŞİM İLE İLGİLİ TEMEL KAVRAMLAR

Aşağıdaki örnek olayı okuyunuz ve verilen soruları grubunuzla tartışınız.

1. Buradaki durumlar bize eğitim-öğretim ortamında hangi faktörlerin önemli olduğuna işaret etmektedir?
2. Öğrenciler arasında hangi yönden farklılıklar vardır? Daha başka ne tür olası farklılıklarda olabilir?
3. Bu öğrenciler Lise öğrencisi olsaydı neler olurdu? Nasıl bir ortam olurdu?
4. Size göre, Ayşe öğretmen daha sonra neler yapmış olabilir?

AYŞE ÖĞRETMENİN ANILARI

Ayşe Öğretmen atandığı ilköğretim okulunda öğrencileriyle ilk kez karşılaşmanın telaş ve heyecanını yaşıyordu. Bahçede açılış merasimi yapıldıktan sonra o da yeni öğrencileriyle birlikte sınıfa girdi. Bazı öğrencilerin annelerinden ayrılıp sınıfa girmeleri bir hayli zaman aldı.

Öğrencilerin bir kısmı mutlu, neşeli; bir kısmı şaşkın ve ürkek bir haldeyken bazıları da ağlıyor ve annelerinden ayrılmak istemiyorlardı.

Ayşe Öğretmen bir müddet sonra sınıfın kapısını kapatıp öğrencilerine ilk hocalık heyecanı ile şarkılar söyletti. Bazı öğrenciler hemen öğrendiler. Oysa bazılarının şarkı sözlerini öğrenmeleri haftalar aldı. Daha sonraki günlerde çizgi çalışmaları yaptılar. Bazı sıralardaki çocukların kalem tutan elleri, kolları birbirlerine değdi ve rahatsız oldular. Sol elini kullanan Ahmet ile sağ elini kullanan Ali arasında bu nedenle anlaşmazlık oldu. Ayşe öğretmene birbirlerini şikayet ettiler.

Ayşe Öğretmen ilerleyen günlerde ufak sıkıntılar çekti. Çocukların söyleneni anlama ve sınıf kurallarını özümleme becerileri birbirinden çok farklıydı. Sınıftaki iki üç öğrenci vardı ki yerlerinde duramıyorlardı. Sınıfın içinde dolaşıyor ve diğer çocukların dikkatini dağıtıp sınıf içi disiplini bozuyorlardı. Bazı öğrenciler ise aksine, çok istekli ve mutluydular. Bir kısım öğrenci vardı ki henüz ilk günkü ürkekliklerini üzerlerinden atamamış, içlerine kapanıp arkadaş edinemiyorlardı. Bu çocuklar adeta kendi dünyalarında yaşıyorlardı ve derse katılmıyorlardı.

Ayşe Öğretmen çocukların ilgilerinin farklı olduğunu biliyordu. Öğrencilerinden biri çizgi çalışması yapılmasında hoşlanırken, diğer öğrencisi resim yapmaktan hoşlanıyordu. Ayşe Öğretmen gene biliyordu ki 1-2 ay geçince öğrencileri farklı şeylerden hoşlansa da dersi dinleyecekler, sorular soracaklar ve zil çalınca dışarı çıkıp kovalamaca, saklambaç oynayacaklardı........

Kaynak: Yeşilyaprak (2002, p.28)

ETKİNLİK:
- ➢ Aşağıda verilen makaleyi bireysel olarak okuyunuz.
- ➢ Grupça size verilen organize şemayı aşağıdaki sorular çerçevesinde doldurunuz.
  - ○ Bu makalede ortaya konulan ve tartışılan soru nedir?
  - ○ Bu problem sizce neden önemlidir?
  - ○ Makaleye konu olan cinsiyetler arasında görülen farklılıklar nelerdir?
  - ○ Bu farklılığın kaynakları ile ilgili ortaya atılan görüşler nelerdir?
  - ○ Bu görüşleri destekleyen kanıtlar var mıdır? Bunlar nelerdir?
  - ○ Bu görüşler çerçevesinde vardığınız sonuç ve yorumlar nelerdir? Neden bu sonuca vardığınızı veya neden bu yorumu yaptığınızı belirtiniz.

CİNSİYET FARKLILIĞI: SONRADAN MI ÖĞRENİLİR YOKSA GENETİK MİDİR?

Erkek ve kadınlar arasındaki belirgin anatomik farklılıklar bir kenara, daha çok "cinsiyetler arasındaki psikolojik farklılıkların öğrenildiği mi yoksa kalıtımsal olarak insanda var olduğu mu" sorusu son zamanlarda artan bir ilgiyle sorgulanmaktadır. Bu farklılıkların öğrenilip öğrenilmediği önemli bir sorudur. Eğer bu farklılıklar öğreniliyorsa ve bazılarının söylediği gibi özellikle bu durum erkeklerin leyhine ise, bu soru bizi yani toplumu ilgilendiren bir sorudur. Çünkü bu durum, çocuk yetiştirme ve bu adaletsizliği ortaya çıkaran eğitsel ortamların değiştilmesini gerektirir. Örneğin, erkek çocuklar küçük yaştan itibaren rekabetçi bir toplumda başarılı olmaları için eğitiliyor ve şekillendiriliyorsa, kız çocuklarına da eşit fırsatların tanınması için bu kurallar ve normlar değiştirilmelidir. Bununla birlikte, aslında cinsiyetler zaten kendi içlerinde fiziksel ve psikolojik farklılıkları barındırırlar. Bu sebepten dolayı, eğitim ortamı her bireye kız veya erkek farketmeksizin kendi potansiyellerini ortaya koyabilmeleri için bütün olanakları sunmalıdır.

Cinsiyetler arasında yıllardan beri en çok bahsedilen farklılıklar şunlardır:
1. Hayatın ilk aylarında, erkek çocuklar seslere karşı daha az duyarlıdır.
2. Kız çocukları küçük kasların koordinasyonunda daha iyi gelişim gösterirler.
3. Kızlar daha erken konuşmayı öğrenirler, daha çok kelime öğrenirler ve genellikle hayatları boyunca dil alanında üstünlüklerini korurlar. Okulda, yabancı dili daha kolay öğrenirler.
4. Erkek çocukları daha fazla konuşma güçlüğü çekerler. Kekelemek vb.
5. Erkek çocukları hem çocuklukta hem de ergenlik döneminde kız çocuklarına göre daha aktif ve saldırgandır. Uzun süre oturamazlar.
6. Erkek çocuklar uzamsal ilişkilerle ilgili testlerde daha iyilerdir.
7. Zeka testlerinde, kız çocukları özellikle sözel alanda daha başarılı iken erkek çocukları matematiksel alanda daha başarılıdır.

Çevreciler, bu farklılıkların kültürümüzdeki her iki cinsiyete karşı olan davranış ve güdüleme şekillerinden kaynaklandığını düşünmektedir. Küçük erkek çocuklarının neden daha aktif ve saldırgan olduklarını merak etmeye gerek yoktur; çünkü aileleri, öğretmenleri veya okudukları kitaplar onlara böyle olmalarını söylemektedir. Kız çocuklarına koşmamaları, atlamamaları veya gürültü yapmamaları söylenir; çünkü bunlar kız çocuğuna yakışan davranışlar değildir. Bu uyarılardan dolayı, küçük kızlar kendilerini sessizce oturmaya ve çizim, dikiş öğrenme ve bebeklerle oynama (hepsi de pasif uğraşlardır) gibi küçük kaslarını geliştirmeye koşullandırırlar. Erkek çocukların ise kendilerini oradan oraya atlamalarına izin verilir. Zaten şartlandırılmalarından dolayı, pasif bir biçimde oturamazlar ve küçük kaslarını geliştiremezler. Dil gelişimi için de durum aynıdır. Kızlar pasif olmaya koşullandırıldıkları için, daha iyi dinleyebilir, yeni sesleri taklit edebilir ve bir kitap okuyacak kadar sürekli oturabilirler. Bu sebeple, kızların neden daha fazla kelime hazinesine sahip olduklarını merak etmemek gerekir. Konuşma problemlerinden de yine kültür sorumludur. Toplum küçük erkek çocuklarından daha fazla şey bekler. 3 yaşındaki bir erkek çocuğunun yanlış konuşması büyük olaydır. Erkek çocuk üzerinde, düzgün konuşması için o kadar çok baskı oluşturulur ki, çocuk aşırı kaygılı biri haline gelir. Kaygı kaygıya eklenir ve kar tanesi etkisi ile bu durum çocukta konuşma sorununa sebep olur. Uzamsal ilişkilerle ilgili olarak, erkek çocukları o kadar çok çekiç, testere, vida ve somunlar dünyası hakkında meraklı olmaları konusunda teşvik edilirler ki; sonuç olarak, onların

uzamsal ilişkiler kurmayı öğrenmeleri bizim için sürpriz olmaz. Onlar bunun için ödüllendirilirler. Kısaca, bu farklılıklar kültürel yapılardan kaynaklanmaktadır ve bir toplum olarak bizler ne kadar kısa zamanda önyargılı düşüncelerden kurtulabilirsek, hepimiz o kadar iyi olacağız ve kızlar kendi potansiyellerine tam anlamıyla ulaşabileceklerdir.
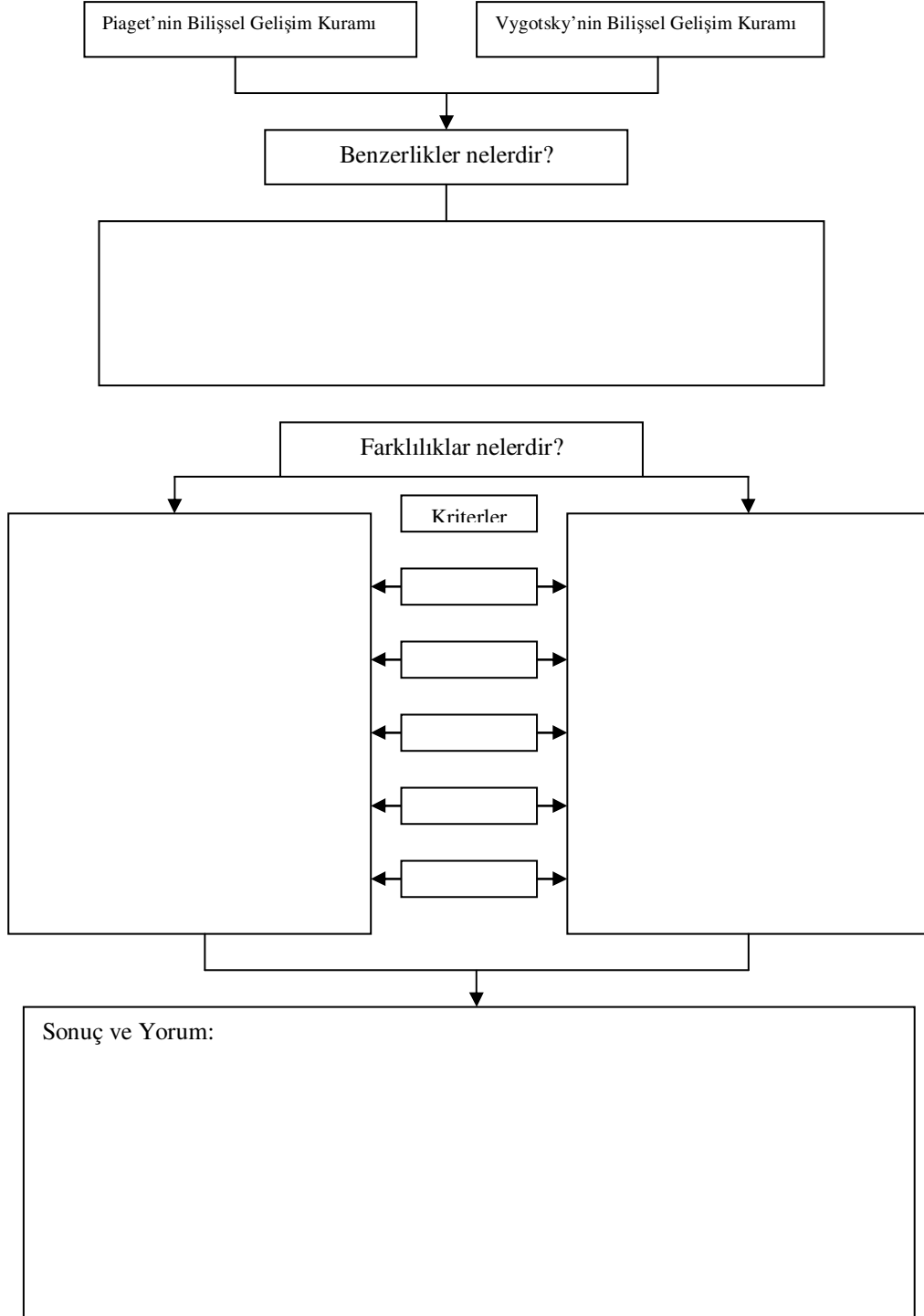
Diğer taraftan, genetikçiler, kültürel faktörlerin bir yere kadar etkisini kabul etmekle birlikte, fiziksel gerçeklerin çevreciler çok daha etkili bir faktör olduğu konusunda ısrar etmektedirler. Örneğin, Nörolog Richard Restak erkek ve kadın beyinleri arasında kimyasal ve morfolojik farklılıkların bulunduğunu söylemektedir. Kadın beyninin sol yarım küresi erkeklerinkinden daha fazla heterojen ve karmaşıktır. Erkeklere göre daha fazla sayıda kadınlar, bir dili konuşma ve anlama yeteneğine sahiptir. Uzamsal ilişkilerle ilgili olarak, bu durum beynin sağ yarım küresi tarafından kontrol edilir ve burada erkek beyninin sağ yarımküresi daha karmaşıktır. Genetikçilere göre, beynin organizasyonunda kalıtımsal olarak cinsiyet farklılıkları vardır ve bu durum göz ardı edilemez. Toplumun görevi, bu kalıtımsal farklılıkları ayarlamaktır, inkar etmek değil. Erkek çocuklar, beynin sağ yarımküresi ile ilişkili işlerde daha başarılı oldukları için, testler her iki gruba da eşit şans tanıyacak şekilde yeniden tasarlanmalıdır. Bununla birlikte, erkek çocuklar arasında hiperaktifliğe, konuşma bozukluğuna ve öğrenme problemlerine sebep olan stresin azalmasını sağlamak için ilköğretim dönemlerinde onlara daha fazla hareket özgürlüğü sağlanmalıdır.

Kaynak: Sprinthall ve Sprinthall (1990, s:62-63)'dan uyarlanmıştır.
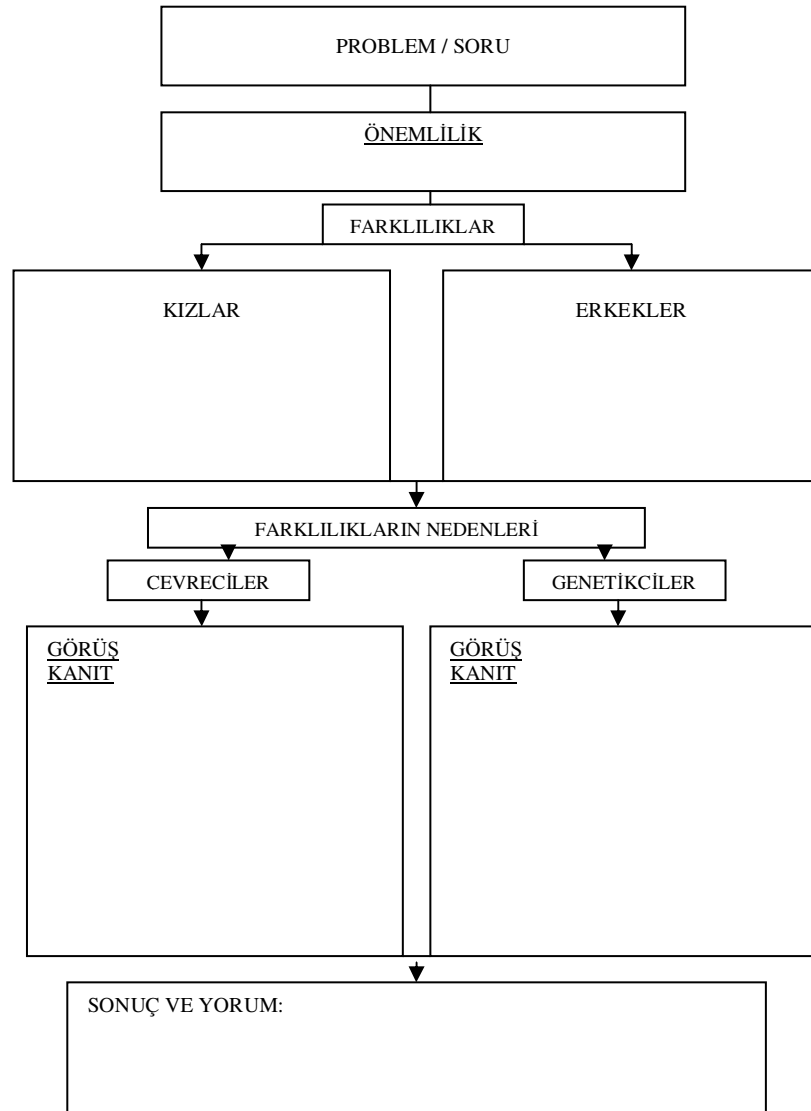
KONU: BİLİŞSEL GELİŞİM

Vygotsky ve Piaget'nin kuramının karşılaştırılması
Grupça aşağıdaki etkinliği yapınız.

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┌──────────────────────────────┐   ┌──────────────────────────────┐
│ Piaget'nin Bilişsel Gelişim  │   │ Vygotsky'nin Bilişsel Gelişim│
│ Kuramı                       │   │ Kuramı                       │
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                    │
                    ▼
          ┌──────────────────────┐
          │ Benzerlikler nelerdir?│
          └──────────────────────┘
                    │
      ┌──────────────────────────────────────────┐
      │                                          │
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          ┌──────────────────────┐
          │ Farklılıklar nelerdir?│
          └──────────────────────┘
       │                                  │
       ▼            Kriterler             ▼
┌───────────┐    ┌──────────┐    ┌───────────┐
│           │ ◄─ │          │ ─► │           │
│           │    └──────────┘    │           │
│           │    ┌──────────┐    │           │
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│ Sonuç ve Yorum:                              │
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BİLİŞSEL GELİŞİM İLE İLGİLİ ÖRNEK OLAY *"EMEL ÖĞRETMENİN FEN BİLGİSİ DERSİ"* ETKİNLİĞİNİN ELEŞTİREL DÜŞÜNME AÇISINDAN DEĞERLENDİRİLMESİ

Eleştirel düşünme becerine sahip olmak için bir bireyin düşünme eyleminde bulunurken aşağıdaki öğeleri göz önünde bulundurması gerekir. Eğer düşünceleriniz bu öğeleri içeriyorsa düşünürken bu öğeleri göz önünde bulunduruyorsanız eleştirel düşünme becerinizi geliştirebilir ve eleştirel düşünebilen bir birey olabilirsiniz. Bunun için bir kişi düşünürken aşağıdaki kriterlere göre eleştirel düşünme becerisini değerlendirebilir.

* Size verilen örnek olayın sonundaki sorulardan birisini seçin.
* Bu soruya verdiğiniz cevabı gözden geçirin. Bu gözden geçirme esnasında aşağıda verilen soruları cevaplayın.
* Aşağıdaki sorulara verdiğiniz cevaplara göre, örnek olaydan seçtiğiniz soruya verdiğiniz cevabı düzeltin.

1. Her eleştirel düşünmenin altında o düşüncenin dayandığı bir AMAÇ vardır. Bu cevabı vermekteki amacınız ne idi?

2. Her eleştirel düşünme, bir SORUya cevap bulmaya yöneliktir. Siz hangi soruya cevap verdiniz?

3. Her eleştirel düşünmenin dayandığı bir VARSAYIM vardır. Siz bu cevabı verirken veya bu cevabı düşünürken hangi varsayımlarda bulundunuz?

4. Her eleştirel düşünme bazı GÖRÜŞ açılarından etkilenir. Cevabınız hangi görüşleri içeriyor? Sizinkini mi? Yoksa başka bakış açılarını da göz önünde bulundurdunuz mu? Sizin kendi görüşünüz nedir? Eğer başkalarından yararlandıysanız onların görüşü nedir?

5. Her eleştirel düşünme BİLGİ, VERİ VE KANITLARa dayalıdır. Siz görüşünüzü ortaya koyarken hangi bilgilerden yararlandınız?

6. Her eleştirel düşünme KAVRAMLARla ifade edilir veya şekillendirilir. Sizin verdiğiniz cevap içinde hangi kavramları kullandınız?

7. Her eleştirel düşünme verilere ve bilgilere anlam veren ve bizi sonuca götüren YORUMLAR içerir. Sizin bilgilerden yola çıkarak ortaya koyduğunuz görüşünüz çerçevesinde yaptığınız yorumlar nedir?

8. Her eleştirel düşünmenin sonucunda ÇIKARIMLAR vardır. Yaptığınız yorumların ortaya koyduğu çıkarımları belirleyiniz.

KONU: AHLAKİ GELİŞİM

ÖRNEK OLAY – KARAR VERME ETKİNLİĞİ 1

- Aşağıda verilen örnek olayı okuyunuz.
- Daha sonra, Dilara'nın ne yapması gerektiğine karar veriniz.
- Etkili bir şekilde karar verebilmek için aşağıdaki aşamalar önerilmektedir.
    1. Karar vermeyi gerektiren durumu belirleyiniz.
    2. Olası seçeneklerin hepsini belirleyiniz.
    3. Her bir seçeneğin muhtemel sonuçları neler olabilir tartışınız. (Örn. Dilara, Arda ve Can, vb. açısından)
    4. Bu sonuçların önemini tartışınız.
    5. Bu sonuçların ışığı altında hangi seçenek en iyisini belirleyiniz.
- Sizler de bu aşamaları takip ederek size verilen organize şemayı doldurunuz.

DİLARA NE YAPMALI?

"Evet biliyorum efendim, o Arda Saygılı'ydı," dedi Can. Dilara, midesine birşeylerin saplandığını hissetti. Dilara yavaşça müdürün odasının yanından geçti - kendi kardeşi Can'ın az önce müdüre yalan söylediği yerden.

Dilara, yürürken bu sabah babasının kahvaltıda söyledikleri aklına geldi. "Gümüş dolma kalemleri çok seviyorum. Plastik olanlar hem çabuk bozuluyor hem de çabuk bitiyor" demişti. Dilara ve Can kahvaltı masasında birbirleri ile bakışmışlardı; çünkü, 3 gün sonra babalarının doğum günüydü. Fakat, odalarına gidip kumbarayı açtıkları zaman ve cüzdanlarını kontrol ettiklerinde aslında güzel bir gümüş dolma kalem alabilecek kadar paralarının olmadığını anlamışlardı.

Dilara, Can'ın okul sekreterinin kalemini çalarken gördüğü zaman, o an birden Can'ın neden böyle birşey yaptığını düşünmüştü. Can, sadece babasına onun istediği gibi bir hediye vererek onu mutlu etmek istemişti.

Dilara ne yapacağını bilmiyordu. Çalmanın doğru bir davranış olmadığını biliyordu ama bu kalem babalarının onlarla gurur duymasını sağlayacaktı. Şanslılardı; çünkü odası sekreterin odasının tam karşısında olduğu için sadece kendisi görmüştü. Şimdi, sanki hiçbirşey bilmiyormuş gibi mi davranmalıydı; yoksa, Can'a birşeyler mi söylemeliydi? bilmiyordu.

Ara için zil çaldığı zaman, Dilara Can'ı bulamadı. Müdürün odasına doğru baktığı zaman, müdürün o sabah sekreterin odasında görülen her çocukla konuştuğunu gördü. Dilara'nın yüzü birden bembeyaz oldu. Can'ın kalemi ne yaptığını merak ediyordu. Eğer çantasındaysa ve aranırsa ona ne olacaktı?

Dilara, Can'ı bulmak için yönetim tarafında doğru koşmaya başladı. Fakat, oraya vardığı zaman Can'ın müdürle konuştuğunu gördü. Hemen duvara doğru iyice yaslandı, böylece onu göremezlerdi. Müdürün ses tonu çok sertti.

Dilara, Can'ı hala duyabiliyordu: "Evet biliyorum efendim, o Arda Saygılı'ydı." Dilara kardeşinin söylediklerinden utanmıştı. Kardeşinin kalemi neden çaldığını anlamıştı – çünkü sadece babasını mutlu etmek istemişti. Fakat şimdi başka bir çocuğu suçluyordu ve üstelik bu çocuk okula daha yeni gelmişti. Dilara'nın ilk düşüncesi Can ile konuşmaktı, fakat Can'ın düşüncesini değiştirmesi şimdi pek olası değildi; çünkü çok dibe batmıştı. Kendi kardeşine söyleyemiyordu peki ne yapabilirdi? Dilara ne yapmalı?

Kaynak: Beyer (1991, p.163)'den uyarlanmıştır.

KARAR VERME BECERİSİ ETKİNLİĞİ

Karar verilecek olay/durum nedir?

Seçenekler

Karar verilen seçenek:

Sonuçlar: Eğer bu karar seçenek uygulanırsa neler olabilir?	Destek: Neden sonucun böyle olacağını veya olmayacağını düşünüyorsun?	Değer: Bu sonuç ne kadar önemli? Neden?	Bu seçenek avantaj (A) mı, dezavantaj (D) mı?

Son Karar Verilen Seçenek ve Nedenleri:

KONU: KİŞİLİK GELİŞİMİ

ÖRNEK OLAY ETKİNLİĞİ
(SEBEP-SONUÇ İLİŞKİSİ ETKİNLİĞİ)

Örnek olayı dikkatlice okuyunuz. Aşağıda verilen soruları, Erickson'un Psikososyal Gelişim Kuramı'nı göz önünde bulundurarak 2. sayfada verilen organize şema üzerinde cevaplandırınız.

1. Buradaki örnek olayda yaşanan sorun nedir?
2. Bu sorunun sebepleri nelerdir?
3. Neden belirttiğin sebeplerin doğru olduğuna inanıyorsun? Bir başka ifadeyle, gerekçen nedir ve neye dayanarak bu sebepleri söylüyorsun?

Ayşe ile Mehmet, son günlere değin ilkokula henüz başlamış olan tek çocukları Ahmet ile birlikte mutlu bir aile yaşamı sürdürmekteydiler. Evliliklerinin birinci yılında doğan Ahmet, mutluluklarına mutluluk katmıştı. Her anne baba gibi onlar da biricik oğullarını çok seviyor, üzerine titriyorlar, onu çok iyi yetiştirmek için ne gerekirse yapmak istiyorlardı.

Bebeklik dönemi boyunca Ahmet'in bakımı, beslenmesi bir kez bile ihmal edilmedi, ana-baba sevgisi ve şefkati ondan hiç esirgenmedi. Ayşe hanım evin tertip ve düzenine çok önem veren titiz bir ev hanımıydı. Kocası Mehmet Bey işine gittiğinde, oğlu Ahmet'i de ihmal etmeden bütün gün ev işleriyle uğraşıyordu. Ne var ki Ahmet ayaklanmıştı artık. Dur durak bilmiyor, oyuncaklarını her tarafa saçıyor, karıştırmadık çekmece, dolap bırakmıyordu. Dahası 3 yaşını geçtiği halde hala altını ıslatıyor, Ayşe Hanım ne yapsa bir türlü çişini haber vermiyordu. Ayşe Hanım; "iş işten geçmeden Ahmet'i terbiye etmeye başlamalıyım, ipin ucunu baştan sıkı tutmalıyım" diye düşünüyordu. Öyle de yaptı. Önce Ahmet'in tuvalet terbiyesi ile uğraştı. Bu iş Ayşe Hanımı çok yordu. İstemese de altını ıslattığı zamanlar Ahmet'i azarlıyor, oda cezası veriyor, hatta poposuna vurmaktan başka çare bulamıyordu. Ayşe hanım bir yandan da Ahmet'in yaramazlıklarıyla uğraşıyor, onun da kendisi gibi tertipli düzenli olması için çalışıyordu. Bu yüzden Ahmet'in uyması zorunlu olan kurallar listesi günden güne artıyordu. Ayşe hanım, Ahmet'in istenmeyen davranışlarını düzeltmek için, gerekirse fiziksel cezaya bile başvuruyordu. İçi yansa da bu böyleydi, hepsi Ahmet'in iyiliği içindi!...Zaman kötüydü, dışarıda her an Ahmet'in başına bir şeyler gelebilirdi. Bu yüzden Ahmet, dışarıda oynayan akralarını pencereden seyretmekle yetiniyordu.

Ahmet böyle büyüdü. Derken okula gitme yaşı geldi. Annesinin isteklerini harfi harfine yerine getiren, uslu, uyumlu bir çocuk olmuştu işte. Ayşe hanım umutluydu, Ahmet okulda da uslu, öğretmeninin sözünden çıkmayan çalışkan bir öğrenci olacaktı, Ayşe hanım mutluydu...

Okulun ilk günleri Ahmet huzursuzdu. Gitmek istemiyordu okula bir türlü. Ayşe hanım ile Mehmet bey biraz şaşırsalar da, alışır diyorlardı. Aylar geçti Ahmet okula alışamadı. İşler bir türlü yoluna girmemişti. Ahmet'in öğretmeni, Ayşe hanımı okula çağırdığında, herşeyi anlamıştı Ayşe hanım. Ahmet'in hiçi yakın arkadaşı yoktu. Oyunlara karışmıyor, bir köşede sessizce, tek başına sınıf arkadaşlarını izliyordu. Sınıfta bir kez bile olsun parmak kaldırmıyor, öğretmenin sorularını yüzü kızararak utana sıkıla bir şeyle mırıldanarak yanıtlıyordu. Derste dalıp dalıp gidiyor, bazen sağı solu seyrediyor, bir türlü derse veremiyordu kendisini. Bunları anlatmıştı öğretmen. Şaşkındı Ayşe hanım. "Nerede yanlış yaptık, nerde!..." diye hayıflanırken, "üzülmeyin" dedi öğretmen. Ahmet için hiçbirşey geç değil. Sizinle sık görüşeceğiz bir süre. Benim okulda, sizlerin evde yapmanız gereken çok şey olacak...

Kaynak: Yeşilyaprak (2002, p.110-111).

SEBEP-SONUÇ İLİŞKİSİ ETKİNLİĞİ

YAŞANAN PROBLEM NEDİR?				

SONUÇ (Yaşanan Problem):

SEBEP	SEBEP	SEBEP	SEBEP	SEBEP
GEREKÇE	GEREKÇE	GEREKÇE	GEREKÇE	GEREKÇE

KONU: KLASİK KOŞULLANMA

ÖRNEK OLAY ETKİNLİĞİ

Örnek olayı dikkatlice okuyup aşağıda verilen soruları cevaplayınız.

Bir Meslek Lisesi'nde, Lise 1. sınıf Genel Muhasebe dersine Muhasebe öğretmenlerinden Ahmet Bey girmektedir. Ahmet öğretmen otoriter bir öğretmendir ve sınıfta ses çıkmasına asla tahammül edememektedir. Bunun için en iyi yolun öğrencileri korkutmak olduğunu düşünmektedir. Bunun üzerine, ilk dersinde sınıfa girer girmez önce öğrencilere sessiz olmaları konusunda bağırır. Sonra gözüne bir öğrenciyi kestirir ve hiç sebepsiz yere öğrenciye dayak atar. Bunu gören öğrenciler, çok korkarlar. Sınıfta hiç ses çıkmaz. Öğretmenin devam eden günlerdeki bu tavırları öğrencileri öyle korkutur ki, öğrenciler aynı zamanda öğretmenden nefret etmeye başlarlar. Öğretmenin adını duymaları, hatta uzaktan görmeleri bile aynı korkunun ve nefretin yaşanmasına sebep olur. Hatta, öğrencilerin kimisi sadece öğretmenden değil Muhasebe dersinden hatta okuldan bile nefret etmeye başlarlar.

Bu öğretmenden bu kadar korkmalarına rağmen öğrenciler Türkçe öğretmenini çok sevmektedirler. Çünkü Türkçe öğretmeni onlara çok iyi davranmaktadır. Üstelik bu derste çeşitli roman ve şiirler okuyup değerlendirebiliyorlar ve öğretmenin verdiği etkinliklerde eğlenebiliyorlar. O yüzden çoğu öğrenci Ahmet öğretmenden nefret ederken, hatta Muhasebe dersinden ve dersin olduğu gün okuldan bile nefret etmelerine rağmen Türkçe öğretmenini ve dersini çok sevmekte o günü iple çekmektedirler.

- o Burada öğrencilerde meydana gelen koşullanma klasik koşullanmadır. Bu koşullanmadaki uyarıcı ve tepki çeşitleri nelerdir? Açıklayarak belirtiniz.

- o Burada görülen koşullanma ilkeleri nelerdir? Açıklayınız.

- o Muhasebe öğretmenine yönelik oluşan koşullanmada sönme ve kendiliğinden geri gelme ilkelerinin görülebilmesi için bundan sonraki günlerde ne olması gerekir?

- o Öğrencilerin bu olumsuz koşullanmalarının düzelmesi için neler yapılabilir?

ÖRNEK OLAY ETKİNLİĞİ

Bir Meslek Lisesi'nde Matematik öğretmeni Ceren öğretmen, öğrencileri Lisede olmalarına rağmen matematik ile ilgili çok sorun yaşamaktadır. Neredeyse, ilköğretim derslerini yapar hale gelmişlerdir. Bu hafta da ondalık kesirler ve yüzdeler konusunu bilmediklerini farkeder. Bunun üzerine bu haftayı bu konuya ayırır. Her hafta test yapan Ceren öğretmen,

" Geçen Cuma'nın testleri burada, testlerine bakamamış olan öğrenciler, testlerinize bakabilirsiniz, lütfen kontrol edin ve notunuzu defterinize yazmayı unutmayın" der.

Öğrencilerin testleri kontrol etmelerini bekledikten sonra, " Tamam, testleri geri gönderin. Bir sonraki testin gelecek hafta olduğunu ve çok çalışmanız gerektiğiniz lütfen unutmayın" diye seslenir.

Öğrenciler testleri geri gönderdikten sonra, sınıfa dönerek, "Tamam, lütfen herkes tahtadaki problemlere baksın...Ne yazıkki verdiğiniz testlerde, yüzdeler ve ondalıklar ile ilgili sorunlarınız olduğunu farkettim. Geç kalınmış olmasına rağmen, bu haftayı bu konuya ayırıyorum. Bunlar üzerinde ciddi bir şekilde çalışmalı ve öğrenmeliyiz." diye belirtir.

"Bir kaç örnek vereyim." diyerek aşağıdaki problemi tahtada çözmeye başlar. "Bir alışveriş merkezine bir ceket almak için gittiniz. Bir ceket gördünüz. 84 YTL ama etiketin üzerinde %25 indirim olduğu yazılı. Yarı zamanlı çalıştığınız bir cafede bu hafta 65 YTL bahşiş kazandınız. Elinizdeki bu para ile bu ceketin fiyatını ödeyebilir misiniz?"

"Şimdi" diye devam eder. "Böyle bir durumda benim yapacağım ilk şey, ceketin fiyatını hesaplamaktır. Böylece durumumu anlayabileyim. Bunun için, 84 YTL'nin %25'ini hesaplamalıyım. Burada %25'in önce ondalıklı sayıya dönüştürülmesi gerekir. 5'den itibaren virgülü 2 basamak sola kaydırırsam 0.25 eder. Sonra 84 ile 0.25'i çarparım."

Ceren öğretmen dediği gibi işlemi tahtada yapıp tamamladıktan sonra öğrencilerin de kendi başlarına başka bir tanesini yapmalarını ve çözümleri tartışmalarını sağladı. "Tamam, anladınız mı?" diye sordu. Hiçbir cevap almayınca, "Peki o zaman, ödev olarak çalışmanız için verdiğim alıştırmaları yapıyorsunuz" dedi.

"Bu 20 sorunun hepsini yapmak zorunda mıyız?" dedi Ahmet.

"Neden?" diye sordu Ceren öğretmen sorulara bakarak.

"Oooo öğretmenim. Ev ödevi için verdiğiniz sorular hep çok zor oluyor" diye söylendi Cenk.

"Evet" dedi Dilara "ben yapamam"

"Bunların ne kadar zaman aldığını biliyor musunuz?" diye ekledi Ayşenur. "Yaptığım bütün şey bu matematikle uğraşmak"

Diğer öğrenciler de 20 sorunun çok olduğu ile ilgili mırıldanmaya başladılar.

"Tamam arkadaşlar. Sadece ilk 10 soruyu yapın...fakat....eğer haftasonu için ödev verirsem bu konuda söylenmeyeceğinize söz verin"

"Evet" diye tüm sınıf bağırdı.

"O zaman problem yok anlaştık" deren Ceren öğretmen.

Ertesi gün, Matematik dersini beklerken, Ayşe ile Dilara kendi aralarında konuşurlar. Ayşe, "Bu hafta bomboş geçti. Kafam hiçbirşey almadı. Ceren hoca beni tahtaya kaldırdığında ve bütün sınıf ben soruyu çözmeye çalışırken bana baktığında, gerçekten çok heyecanlanıyorum. Eğer bugün beni yine kaldırırsa gerçekten bu sefer öleceğim.

Ceren öğretmen derse gelir. Yoklamadan sonra, "Tahtadaki probleme bakalım lütfen": "145 YTL'ye satılan bir bisikletin fiyatında %15 indirim vardır. Yeni fiyatı nedir?" diye sorar.

"İlk önce, tahminleri alalım bakalım sonra gerçek çözüme bakalım...Yeni fiyat ne olabilir acaba?....Ayşe?

"........Ben............Şey.............Emin değilim" diye lafı yuvarladı Ayşe.

"Burak, sen ne düşünüyorsun?"

"..............Şey.........Sanırım yaklaşık 120 YTL" dedi Burak.

"İyi yaklaşım. Lütfen sınıfa bu rakama nasıl ulaştığını anlatır mısın?"

".....Şeyy....Etiket fiyatının %10'u 14.50 YTL, o yüzden %15 yaklaşık olarak 7 YTL daha demek, ki bu da toplam yaklaşık olarak 21YTL ve 145'den 21 çıkarsa bu da yaklaşık olarak 120 YTL eder."

"Güzel" dedi Ceren öğretmen. "Şimdi çözelim ve sonucu görelim bakalım....Arzu?"

"%15'i önce ondalıklı sayıya dönüştürürüz." dedi Arzu. "Çok iyi Arzu. Peki sonra?.....Turan?"

"145 ile 0.15'i çarparız." diye cevap verdi Turan

"Peki...hesapladınız mı? Ne çıktı? ....Biri söylesin."

"200.17" diye seslendi Dursun. "oooo bu olamaz....bu gerçek fiyatın da üzerinde bu olamaz...Bir dakika öğretmenim...Tekrar yapıyorum. 21.75 YTL"

Gülümseyerek "Güzel" dedi Ceren öğretmen. "İşte bu bizim yapmak istediğimiz şey. Hepimiz hatalar yapacağız, fakat eğer bu hatalarımızı yakalayabilirsek işte o zaman ilerleyebiliriz. Devam edelim. Bu problemleri yapabilirsiniz. Evet şimdi ne yapacağız?" diye devam etti öğretmen.

" Çıkarma" dedi Cansu.

"Peki devam edelim"

"142.83" diye cevap verdi Burcu.

"Şimdi bir dakika. Bir kere daha düşün. Biz en son ne bulmuştuk?"

"Aaaaa...evet tamam....şimdi anladım...123.35 YTL"

"İlkinde ne yaptında yanlış sonuç elde ettin?" diye sordu öğretmen.

"Ondalık virgülünü yanlış yere koymuşum"

"Evet...iyi işti. Şimdi bir başka örneğe bakalım." diyerek şu problemi gösterdi. "Aylin, saati 5.25YTL'ye bir ofiste çalışmaya başlar. 4 ay sonra, patronu ona %8 zam verir. Şimdi Aylin ne kadar kazanmaktadır? Şimdi bu soruyu nasıl çözebiliriz görelim. Hadi bakalım, Ayşe?"

"......Şey.....Ben bilmiyorum"

" Ceyda?"

"%8'i ondalıklı sayıya dönüştürürüz ve 5.25 ile çarparız." diye cevapladı Ceyda.

"Güzel Ceyda. Hadi şimdi hep beraber yapalım." Ceren öğretmen öğrenciler problemi çözerken onları seyretti. Sınıfla beraber 2 problem daha çözdüler. Sonra sınıfa dönerek "Şimdi, size dağıttığım soruları yapacaksınız ve bakın, sadece 8 tane problem var."

Sınıf soruları çözmeye başladı. Öğretmen de bu sırada sınıfta dolaşmaya başladı. Ahmet'in 2. problemi yanlış yaptığını farketti, "Ahmet bu soruya tekrar bak. Yapabileceğini biliyorum. Bir daha dene. Bir kaç dakika sonra tekrar bakacağım." dedi.

Öğrencileri kontrol etmeye devam ederken , Ayşe'nin daha yeni başlamış olduğunu farketti. "Ne yapıyorsun?" diye sorar. " Kayboldum. Bu soruda bir ipucu bile bulamadım" dedi Ayşe, ikinci soruya işaret ederek.

"Burada, şimdi sana göstereyim" diye cesaret verecek şekilde konuşarak soruyu çözmeye başlar. "Matematiğin senin için ne kadar zor olduğunu biliyorum. Şimdi beni izle" der

Ayşe izlerken Ceren öğretmen soruyu çözer.

"Bak gördün mü? O kadar da kötü değil. Şimdi bir sonrakini sen yap bakalım"

Ceren öğretmen öğrencilere yorumlar yaparak sınıfta bir kere daha tur atar. Ahmet'in yanından geçerken nasıl gittiğini sorar. " Çok iyi. Şimdi nasıl olduğunu anladım. Süper bir şey bu" diye sevinçle cevap verir Ahmet.

Ayşe'nin 3. soruyu da yanlış yaptığını farkeden öğretmen, "Bir sonrakine bir bakalım" der. "İlk olarak, hatırla yüzde olarak verilen sayıyı ondalığa dönüştürmen gerekiyor. Problem %30 fiyatın arttığını söylüyor. Sen çıkardın ve yüzdeyi ondalık sayıya dönüştürmedin. Burada, şimdi beni seyret." Ceren öğretmen dikkatli bir şekilde soruyu çözer ve çözümü Ayşe'ye gösterir.

Öğretmen son iki dakikaya kadar sınıfı dolaşır. "Tamam. Herkes bir baksın. 2 dakika sonra zil çalacak. Haftaya soruları tamamlayarak gelin. Şimdi herkes toparlansın. Haftaya görüşmek üzere"

Kaynak: Eggen ve Kauchak (1997:228-230)'dan uyarlanmıştır.

Aşağıdaki soruları cevaplandırınız. Cevapları verirken yukarıdaki metindeki örnek olaydan alıntılar yaparak cevabınızı veriniz.

1. Bu örnek olaydaki klasik koşullanmadan örnekler veriniz.
2. Burada geçen edimsel koşullanma örnekleri nelerdir?
3. Olumsuz pekiştirme ile ilgili örnek olaydan en az 2 örnek veriniz.
4. Pekiştirme tarifeleri ile ilgili örnek veriniz. Ve etkili olup olmadığını değerlendiriniz. Sizin bu konuda önerileriniz nelerdir?
5. Ceren öğretmenin, dönüt ve ödüllendirme ile ilgili derste yaptıklarını değerlendirin. Bunları geliştirmek için Ceren öğretmen daha neler yapabilirdi?
6. İstenen davranışların ortaya çıkarılmasında öğretmen ne kadar etkiliydi?
7. Ceren öğretmenin dersinde öğrencilere nasıl bir model olduğunu değerlendirin. 1 olumlu, 1 de olumsuz örnek verin.
8. Öğrencilerin öz düzenleme ve öz yeterlik becerilerin geliştirmek için Ceren öğretmen neler yapabilirdi?

ARTICLE CRITIQUE CRITERIA

Makalenin adı:
Makalenin yazarı:
Makalenin yayımlandığı yer ve tarih

Giriş

1. Makalenin **amacı** nedir?
2. Bu makalede yazarın üzerinde çalıştığı veya durduğu **konu veya problem** nedir? Açık, anlaşılır ve tarafsız bir biçimde ifade edilmiş midir?
3. Yazarın konuya ilişkin **görüşü** nedir?
4. Yazarın bu çalışmadaki **varsayımları** nelerdir?
5. Makalede ana konu ile ilişkili kullanılan **temel kavramlar** nelerdir? Açık ve anlaşılır bir şekilde ifade edilmiş midir?

Bulgular

6. Yazar tarafından kullanılan **bilgiler, kaynaklar, veriler, teoriler veya yaşanan tecrübeler (kanıtlar)** nelerdir? Bu bilgilerin makale konusu ile ilişkisi nedir?

Sonuç/Yorum/Tartışma

7. Yazarın bu bilgiler, veriler ve tecrübelere dayalı yaptığı **yorumlar** nelerdir? Bu yorumlardan elde edilen **sonuçlar** nelerdir?
8. Yazara göre, bu sonuçlar eğitsel çerçevede **ne anlam ifade etmektedir**?

❖ Bu cevaplara dayanarak, makalenin ana konusunun önemini Gelişim ve Öğrenme dersi kapsamında tartışınız.
  ➢ Bu makalenin gelişim ve öğrenme psikolojisi ile ilgisi nedir?
  ➢ Neden bu konu gelişim ve öğrenme psikolojisi için önemlidir?
  ➢ Neye dayanarak bu konunun önemli olduğunu düşünüyorsunuz?

❖ Yazarın görüşlerinde veya düşünme şeklinde ne gibi potansiyel sorunlar görüyorsunuz? Yazarın yaptığı yorumlar veya vardığı sonuçlar belli bir bilgiye veya veriye dayanıyor mu? Kullanılan bilgiler veya veriler sonucu ne derecede destekliyor?
❖ Yazar sonuca ulaşmada mantıklı bir yol izlemiş midir? Sonuca nasıl ulaştığının iyi bir açıklaması yapılmış mıdır?
❖ Makalede sonuca ulaşmada kullanılan bilgiler ilişkili, anlamlı, geçerli ve yeterli midir? Bilgilerin ilişkili, anlamlı, geçerli ve yeterli olup olmadığına karar verebilmek için yeterli bilgiye sahip misiniz?
❖ Ne tür görüşler yazar tarafından göz ardı edilmiştir veya bu konu işlenirken göz önünde bulundurulmamıştır? Karşıt fikirlere yönelik açıklama yapılmış mıdır?

OUTLINE OF PROJECT AND PROJECT ASSESSMENT CRITERIA

PROJE ÇALIŞMASI

Yaptığınız projeniz aşağıdaki başlıkları içermelidir.

1. Kapak

2. Proje konusu ve amacı: Proje konunuzu ve amacınızı kısaca yazınız.

3. Konu ile ilgili kaynak tarama (2-3 sayfa): Araştırma konunuz ile ilgili mutlaka kaynak taraması yapmalısınız. Burada her araştırdığınız kaynaktaki bilgileri değil, sadece konunuz ile ilgili önemli gördüğünüz bilgileri yazmalısınız. Bu bölümü yazarken, kaynaktan direk alıntı yaparsanız mutlaka kaynak adı ve sayfa numarası vermelisiniz. Örnek:

"..." (Ulusoy, 2005: 53)

Direk alıntı yapmak yerine kendi cümlelerinizle ifade etmeye çalışınız. Kaynaktaki bilginin kısaca bir özetini yapıp sizin araştırmanız için önemli ve dikkate değer noktasını vurgulayınız.

Ayrıca bu bölümde, araştırmanızda yer alan <u>temel kavramların</u> (örneğin, eğitimde şiddet, rehberlik ve psikolojik danışma, vb.)tanımlarını da veriniz.

4. Yöntem: Araştırmada verileri elde etme yönteminizi açıklamalısınız. Anket mi, görüşme mi, gözlem mi, dokumanlar, vb. hangisini veya hangilerini kullandınız belirtmelisiniz? Bu veri toplama araçlarının bir örneğini çalışmanıza eklemelisiniz. Verileri kimden veya nereden elde ettiniz? Nasıl analiz ettiniz? bu soruların da cevaplarını vermelisiniz.

Ayrıca bu bölümde, projeniz ile ilgili <u>varsayımlarınız</u> varsa lütfen bunu belirtiniz. Örneğin, "Bu araştırmada, görüşmeye katılmış olan öğretmenlerin birbirlerini etkilemedikleri varsayılmıştır."

5. Bulgular: Yaptığınız çalışmadan elde ettiğiniz bulguları yazmalısınız. Veri toplama araçlarınızdan elde ettiğiniz sonuçları yazın. İstatistiksel analiz yaptıysanız, tablolar halinde sonuçları sunun.

6. Yorum ve çıkarımlar: Bu bölümde, elde ettiğiniz bulgular, projeniz ile ilgili neler söylüyor? bu konudaki yorumlarınızı bu bölüme yazmalısın. Ayrıca bu sonuçlardan yola çıkarak ne gibi çıkarımlarda bulunuyorsunuz; bir başka deyişle, bu sonuçlardan yola çıkarak eğitime, öğretime, dersimize, kendinize ve diğer öğretmen adaylarına yönelik neler söyleyebilirsiniz? Bu soruların cevaplarını bu bölümde vermelisiniz.

7. Kaynakça: Projenizde yaralandığınız kitap, makale, dergi veya gazeteleri bu bölümde yazar adını, yayım tarihini, kaynak adını ve yayım yerini belirterek yazınız.

Bu projenizde aşağıdaki soruların da yanıtlarını bulabilmeliyiz. Bu soruları ayrıca cevaplandırmanıza gerek yoktur. Bu sorular, size yön vermek amacıyla sunulmuştur. Projenizde bu soruların cevaplarını görebilmemiz sizin düşünsel becerinizin de bir yansıması olacaktır.

1. Her eleştirel düşünmenin altında o düşüncenin dayandığı bir AMAÇ vardır. Projenizin amacı nedir?

2. Her eleştirel düşünme, bir SORUya cevap bulmaya yöneliktir. Siz hangi soruya cevap bulmaya çalıştınız?

3. Her eleştirel düşünmenin dayandığı bir VARSAYIM vardır. Siz bu projeyi yaparken hangi

varsayımlarda bulundunuz?

4. Her eleştirel düşünme bazı GÖRÜŞ açılarından etkilenir.Siz bu projeyi yaparken başkalarının görüşlerinden etkilendiniz mi? Evetse, hangi görüşlerden etkilendiniz?

5. Her eleştirel düşünme BİLGİ, VERİ VE KANITLARa dayalıdır. Siz projenizde hangi bilgilerden yararlandınız? Yaptığınız yorumlar hangi verilere dayanıyor? Kitaplar, makaler, anketler, görüşmeler, gözlemler, gazeteler, vb kullandıysanız hangilerini kullandınız? Bu kaynakları nasıl elde ettiniz?

6. Her eleştirel düşünme KAVRAMLARla ifade edilir veya şekillendirilir. Bu projenizde siz hangi kavramlara yer verdiniz?

7. Her eleştirel düşünme verilere ve bilgilere anlam veren ve bizi sonuca götüren YORUMLAR içerir. Sizin bilgilerden yola çıkarak yaptığınız yorumlar nedir?

8. Her eleştirel düşünmenin sonucunda ÇIKARIMLAR vardır. Yaptığınız yorumların ortaya koyduğu çıkarımları belirleyiniz.

APPENDIX R

INFORMATION SHEET ABOUT PORTFOLIO

Yer alacak çalışmalar	Hedefler
1. Günlükler **(Her hafta ders sonunda bireysel olarak hazılanacak)**	Öğrenmeyi öğrenebilme Kendine uygun öğrenme stratejilerinin farkına varabilme Kendi gelişimini takip edebilme Kendini geliştirebilme
3. Ders ön çalışma formu **(Her hafta bireysel olarak dersten önce hazırlanacak)**	Bir konuda geçen temel kavramları tanıyabilme Temel kavramlar arasındaki ilişkileri görebilme/gösterebilme Konuda geçen temel özellikleri ifade edebilme Konuda geçen temel ilkeleri ifade edebilme
4. Ödevler **(Zaman zaman dersten sonra bireysel veya grupça hazırlanacak)**	Bir konuda geçen temel kavramları kavrayabilme Temel özellikleri kavrayabilme Temel ilkeleri kavrayabilme Farklı kuramları/yaklaşımları karşılaştırabilme Bir konu ile ilgili örnek olayda geçen o konunun temel ilkelerini analiz edebilme Bir önek olay ile ilgili yorum yapabilme Problem çözme becerisi geliştirebilme Bir konu ile ilgili makale değerlendirebilme
5. Grup çalışması etkinlikleri **(Dönem boyunca ders içinde veya dersten sonra gerçekleştirilecek)**	Bir konuda geçen temel kavramları kavrayabilme Temel özellikleri kavrayabilme Temel ilkeleri kavrayabilme Farklı kuramları/yaklaşımları karşılaştırabilme Öğrenilen kuramları farklı durumlarda uygulayabilme Bir konu ile ilgili örnek olayda geçen o konunun temel ilkelerini analiz edebilme Bir önek olay ile ilgili yorum yapabilme Problem çözme becerisi geliştirebilme Bir konu ile ilgili makale değerlendirebilme
6. Proje: **(Dönem boyunca grupça yürütülecek)**	Problem çözme becerisi geliştirebilme Öğrenilenleri farklı durumlara transfer edebilme

APPENDIX S

THEMES AND CODES FOR STUDENT JOURNALS

1. Effectiveness of the instruction on learning
    1.1. Learning environment
        1.1.1. Expressing opinions freely and comfortably
        1.1.2. Learning by thinking
        1.1.3. Preventing rote learning
        1.1.4. Learning by discovering
        1.1.5. Considering topics from different perspectives
        1.1.6. Making comparisons
        1.1.7. Motivation
        1.1.8. Active participation

    1.2. Teaching-learning activities/strategies/methods
        1.2.1. Questioning
            1.2.1.1. Examining topics by questioning and reasoning
            1.2.1.2. Participating actively
            1.2.1.3. Paying attention
            1.2.1.4. Listening carefully
        1.2.2. Group works
            1.2.2.1. Exchanging views
            1.2.2.2. Realizing deficiencies and fallacies in their thoughts
            1.2.2.3. Reaching a common decision
            1.2.2.4. Contribution of each student to others' opinions
            1.2.2.5. Acquiring knowledge better
            1.2.2.6. Yielding various comments on a topic
        1.2.3. Case studies
            1.2.3.1. Making topics/concepts understandable
            1.2.3.2. Transferring theories into different cases
            1.2.3.3. Putting theories into real life
        1.2.4. Discussion
            1.2.4.1. Considering a subject from different points of view
            1.2.4.2. Reaching a reasonable conclusion
            1.2.4.3. Putting theory into practice
            1.2.4.4. Repeating topics
            1.2.4.5. Attracting students' attention
        1.2.5. Graphic organizers
        1.2.5.1. Preliminary study

    1.3. Instructional materials
        1.3.1. Visual materials (video, posters, etc.)

    1.4. Specific activities
        1.4.1. Role playing
        1.4.2. Spontaneous topic presentation
        1.4.3. Concept mapping competition

1.4.4. Folklore show
1.4.5. Silent movie
1.4.6. Recalling words exercise

1.5. Negative aspects
1.5.1. Incomprehensible/complicated topics
1.5.2. Ineffective activities

2. Effectiveness of the instruction on thinking skills
2.1. Teaching-learning activities/strategies/methods
2.1.1. Questioning
2.1.1.1. Generating their own ideas
2.1.1.2. Exploring definitions, principles and implications of theories
2.1.1.3. Reasoning their own perspectives (confidence in reason)
2.1.1.4. Stimulating intellectual humility
2.1.2. Case studies
2.1.2.1. Relating topic to the cases
2.1.2.2. Putting themselves into the place of the persons/situations in the cases
2.1.2.3. Analyzing/reasoning persons/situations deeply
2.1.2.4. Finding solutions for problems
2.1.2.5. Developing their own perspectives
2.1.2.6. Exploring implications and consequence
2.1.2.7. Making implication toward teachin
2.1.2.8. Making inferences
2.1.2.9. Developing intellectual faith

2.1.3. Given examples
2.1.3.1. Relating topic to real life
2.1.3.2. Questioning the accuracy of examples

2.1.4. Discussion in group works
2.1.4.1. Realizing different view
2.1.4.2. Comparing different perspectives and their own thoughts through dialogs among students
2.1.4.3. Listening critically

2.1.5. Comparison activities
2.1.5.1. Comparing views dialogically
2.1.5.2. Detecting similarities and differences
2.1.5.3. Making plausible interpretations
2.1.5.4. Developing confidence in reason
2.1.5.5. Developing their own perspective
2.1.6. Visual materials
2.1.6.1. Comparing ideals with real life
2.1.6.2. Independent thinking

3. Metacognitive strategies to learn better
3.1. Self-regulation
3.2. Regular and planned study
3.3. Reading more
3.4. Searching different sources
3.5. Using intellectual skills

3.6. Discussing topics
3.7. Using coding techniques
3.8. Repeating the topic or the in-class activities
3.9. Observing development of different age groups
3.10. Transferring the topics/concepts into real life
3.11. Watching movies and photos,
3.12. Taking notes
3.13. Participating into the class actively
3.14. Listening carefully
3.15. Overcoming excitement

4. Difficulties/problems
4.1. Participating
4.2. Expressing their thoughts
4.3. Constructing meaning of abstract topics
4.4. Determining similarities and differences
4.5. Establishing relationships among topics
4.6. Being adapted to groups
4.7. Being loaded with assignments
4.8. Being overloaded with hard courses in the same semester.

5. Instructional suggestions for better instruction
5.1. Repeating topics
5.2. Establishing harmonic groups
5.3. Making group presentation
5.4. Questioning
5.5. Using a variety of visual materials
5.6. Implementing a variety of activities
5.7. Giving assignments and projects
5.8. Providing more participation
5.9. Administering a follow-up test at the end of each week
5.10. Drama/Role playing

APPENDIX T

THEMES AND CODES REGARDING FOCUS GROUP INTERVIEWS

1. Contributions to teaching skills
    1.1 Professional development
        1.1.1. Having knowledge-background about development and learning
        1.1.2. Knowing/understanding students' needs/behaviors
        1.1.3. Knowing how to teach/transfer knowledge
            1.1.3.1.   Knowing what to teach
            1.1.3.2.   Knowing what to do regarding problems in class
            1.1.3.3.   Knowing how to behave
            1.1.3.4.   Knowing how to attract sts' attention
            1.1.3.5.   Knowing how to communicate with sts
        1.1.4. Gaining awareness of being a teacher
        1.1.5. Having experiences to apply in their own classes

    1.2 Personal development
        1.2.1. Being able to express their own opinions
        1.2.2. Developing self-confidence
        1.2.3. Being able to speak in front of people

2. Contributions to thinking skills
    2.1. Thinking strategically in a short time
    2.2. Making reasonable comments/ inferences
    2.3. Associating with topics
    2.4. Relating topics to real life
    2.5. Establishing relationship among topics
    2.6. Noting differences
    2.7. Exploring their own perspective
    2.8. Finding solutions
    2.9. Evaluate their own reasoning
    2.10. Realizing other's opinions
    2.11. Defending a view
    2.12. Evaluating theories/perspectives
    2.13. Considering from different point of views
    2.14. Analyzing incidences
    2.15. Proposing different/creative opinions

3. Acquisition of course topics
    3.1. Basic concepts
    3.2. Physical development
    3.3. Cognitive development
    3.4. Linguistic development
    3.5. Moral development
    3.6. Personality development
    3.7. Classical conditioning
    3.8. Operant conditioning
    3.9. Social learning theory

3.10. Gestalt theory
3.11. Information processing theory
3.12. Constructivism
3.13. Humanistic approach to learning
3.14. Motivation

4. Reasons affecting the acquisition of course topics
    4.1. Reasons for incompetency
        4.1.1. Student-originated reasons
            4.1.1.1.   Not studying
            4.1.1.2.   Not considering important
            4.1.1.3.   Not repeating
            4.1.1.4.   Not attending to the course/not participating
            4.1.1.5.   Having stress of final exams
            4.1.1.6.   Not doing preliminary study
        4.1.2. Instruction-originated reasons
            4.1.2.1.   Not being attracted
            4.1.2.2.   Not understand how to use
            4.1.2.3.   Not doing teaching practice
            4.1.2.4.   Confusing theories/concepts with each other
            4.1.2.5.   Not being able to form wholeness
            4.1.2.6.   Not understanding the logic behind theories
            4.1.2.7.   Not understanding the relation among topics

    4.2. Reasons for competency
        4.2.1. Student-originated reasons
            4.2.1.1.   Studying
            4.2.1.2.   Considering topics important
            4.2.1.3.   Repeating the topic
            4.2.1.4.   Having prior knowledge
            4.2.1.5.   Being his/her own drama topic
            4.2.1.6.   Listening to lessons well
            4.2.1.7.   Doing preliminary study

        4.2.2. Instruction-originated reasons
            4.2.2.1.   Being attracted
            4.2.2.2.   Being able to establish relationships among topics
            4.2.2.3.   Being able to relate topics with real life
            4.2.2.4.   Attractive topics
            4.2.2.5.   Understandable topics
            4.2.2.6.   To understand how to use/implement topics in teaching

5. Effectiveness of Teaching Methods/Strategies/Activities
    5.1. Graphic Organizers
        5.1.1.   Coming to class being prepared
        5.1.2.   Reviews the topic
        5.1.3.   Preliminary study
        5.1.4.   Being able to determine points that are not understood
    5.2. Case Studies
        5.2.1.   Visualization of theories in mind
        5.2.2.   Effective for learning
    5.3. Article critique
        5.3.1.   Contributing to research skill

5.4. Project
    5.4.1.   Contributing to research skill
5.5. Journals
    5.5.1.   Reviewing lesson
    5.5.2.   Repeating topic
5.6. Drama
    5.6.1. Pros
        5.6.1.1.   Enjoyable
        5.6.1.2.   Provide understanding/learning
        5.6.1.3.   Provide retention
        5.6.1.4.   Putting theories into practice
        5.6.1.5.   Concreting abstract theories
        5.6.1.6.   Overcoming excitement
        5.6.1.7.   Providing better communication among group members
        5.6.1.8.   Contributing to self-evaluation
    5.6.2. Cons
        5.6.2.1.   Aiming to laugh/attract attentions rather than to explain theories
        5.6.2.2.   Not understanding its relation with topic
        5.6.2.3.   not ensuring equal responsibility among group members
        5.6.2.4.   performing drama without reading the topic
5.7. Follow-up test
    5.7.1.   Providing self-evaluation
    5.7.2.   Effective tool in determining our own deficiencies
    5.7.3.   Providing repetition
    5.7.4.   Providing retention

6. Participation
    6.1.   The way of participation
        6.1.1.   Expressing his/her opinion
        6.1.2.   Answering questions
        6.1.3.   Involving in activities/group studies
        6.1.4.   Asking questions
        6.1.5.   Criticizing
    6.2.   Reasons for participating
        6.2.1.   Enjoyable activities
        6.2.2.   Spending time efficiently
        6.2.3.   Having student-centered learning environment
        6.2.4.   Questions being asked in the class
        6.2.5.   Diversity of activities
        6.2.6.   Being attracted
        6.2.7.   Having participatory characteristic
        6.2.8.   Having a comfortable classroom environment
    6.3.   Reasons for not participating
        6.3.1.   Being shy/excited

7. Attitudes toward the course instruction
    7.1. Pros
        7.1.1.   Having an effective learning environment different from other courses
        7.1.2.   Having an attractive/enjoyable environment
        7.1.3.   Having a comfortable learning environment
        7.1.4.   Having a variety of interesting activities
        7.1.5.   Provide student-centered environment
        7.1.6.   Experiencing some activities for the first time

7.1.7. Satisfied with the course instruction
7.1.8. Not having grade concern
7.1.9. Being motivated to learn
7.1.10. Having many opportunities to speak/participate
7.1.11. Providing the promotion of thinking skills
7.1.12. Increasing attendance
7.1.13. Increasing active participation
7.1.14. Providing better communication/interaction with teacher and among sts
7.1.15. Providing better learning/retention

7.2. Cons
7.2.1. Intensity of the course
7.2.2. Tiring course progress
7.2.3. Pace of the course
7.2.4. Performing tasks continuously
7.2.5. Schedule of the course with other hard courses at the same semester
7.2.6. Teacher-centered instruction
7.2.7. No active participation
7.2.8. Not meeting expectations
7.2.9. Not having any responsibility for their own learning

7.3. Suggestions for activities
7.3.1. More student-centered approach
7.3.2. More thinking
7.3.3. Active participation
7.3.4. Discussion
7.3.5. Individual Works
7.3.6. Group work
7.3.7. Assignment
7.3.8. Projects, research
7.3.9. Article critiques
7.3.10. Graphic organizers
7.3.11. Presentation of topics by sts

APPENDIX U

TURKISH SUMMARY

GİRİŞ

Bu çalışma, Gazi Üniversitesi Ticaret ve Turizm Eğitim Fakültesi'nde verilen eğitim bilimleri derslerinden Gelişim ve Öğrenme dersinin, eleştirel düşünmeye dayalı öğretime göre geliştirilmesi sürecinin Stufflebeam'in Çevre, Girdi, Süreç, ve Çıktı (Context, Input, Process, Product-CIPP) modeli kullanılarak değerlendirilmesi çalışmasıdır.

Öğretmen eğitimi programlarında, öğretmen adaylarının öğretim becerilerini geliştirmeyi ve kaliteli öğretmenler yetiştirmeyi amaçlayan çeşitli ve önemli eğitim bilimleri dersleri mevcuttur. Bu amaca ulaşabilmek için, bu derslerin etkili bir şekilde verilmesi ve öğretimin kalitesinin sağlanması gerekir. Bu sebeple, genel, mesleki ve teknik eğitime yönelik öğretmen eğitiminin kalitesini yükseltmek amacıyla, 1997 yılında Öğretmen Yetiştirme Türk Milli Komitesi kurulmuştur. Öğretmen eğitimi programları yeniden yapılandırılmış ve yenilenen bu programlar 1998-1999 öğretim yılından itibaren yürürlüğe girmiştir (CHE, n.d.a). Aynı dönemde, öğretmen eğitiminin akreditasyonunu sağlamaya yönelik girişimler başlatılmış olup bu bağlamda, bir akreditasyon programı geliştirmiş ve öğretmen eğitimi standartları ve öğretmen yeterlikleri belirlenmiştir (CHE, n.d.b). 1995 yılından beri, Milli Eğitim Bakanlığı (MEB) da öğretmen yeterliklerini belirleme çalışmaları yapmaktadır (Karaçalı, 2004). Son olarak, Temel Eğitime Destek Projesi kapsamında, öğretmen yeterlikleri yeniden belirlenmiştir.

Bu yeterlikleri belirlemenin temel amacı, öğretmen eğitimi programlarının bu yeterliklerle donanımlı öğretmen adayları yetiştirecek şekilde geliştirilmesini sağlamaktır. Bu amaca hizmet etmesi gereken derslerinden birisi de Gelişim ve Öğrenme dersidir. Aslında, belirlenen öğretmen yeterlikleri alanları içerisinde yer alan ve öğrencilerin gelişim ve öğrenme düzeylerine ilişkin bilgi ve becerileri içeren "Öğrenciyi Tanıma" yeterlik alanı da bu dersin önemine işaret etmektedir. Çünkü bu

ders, daha sonraki derslerde, öğretmenlik uygulamasında ve öğretmen mesleğinde gerekli olan bu bilgi ve becerilerin kazanımına yönelik eğitim ortamları sağlamayı amaçlamaktadır. Bu bağlamda, Peterson, Clark, ve Dickson (1990) 21. yüzyılın ihtiyaçlarına yönelik geliştirilen her öğretmen eğitimi programının insan gelişimi ve öğrenmesi üzerine bir dersi mutlaka içereceğini ifade etmektedirler. Bu sebeplerden dolayı, öğretmen eğitimi programlarının zorunlu bir parçası olarak bu dersin etkili bir şekilde öğretilmesi önemlidir.

Bu konuda, eleştirel düşünmeye dayalı öğretim hem etkili öğrenmeyi hem de eleştirel düşünme becerilerinin gelişimini sağlaması açısından yıllardır üzerinde durulan bir yaklaşımdır. Öğrencilerin düşünme becerilerinin geliştirilmesi sadece bir konuyu iyi bir şekilde öğrenmesi için değil çağımızın ihtiyaçları ile baş edebilmek için de önemlidir (Beyer, 1988a; Burden, 1998; Halpern, 1999; Maclure, 1991; McTighe & Schollenberger, 1991). O yüzden, yılardan beri ilgili araştırma, kitap ve makalelerde eleştirel yada yaratıcı düşünme gibi düşünme becerilerinin öğretiminin önemi üzerinde durulmaktadır (Baumfield, 2006; Beyer, 1988a, 1988b, 1991, 1998; Burden & Williams, 1998; Costa, 1991a; Eggen & Kauchak, 2001; Grant, 1988; Johnson, 2000; Kincheloe & Weil, 2004; Maclure & Davies, 1991; Moseley, Baumfield, Elliot, Gregson, Higgings, Miller, & Newton, 2005;. Moseley, Elliot, Gregson & Higgins, 2005; Nisbet, 1993; Paul, Binker, Martin, & Adamson, 1989; Şahinel, 2005; Zohar, 2006; Zohar & Dori, 2003; Zohar & Schwartzer, 2005). Aslında, düşünme becerilerinin önemi öğretmen merkezli yaklaşımdan öğrenci merkezli yaklaşıma dönüşümün yaşanmasıyla birlikte artmıştır. Çünkü öğrenci merkezli öğretim, öğrencilerin ezberlemek yerine düşünceler, fikirler ve gerçekler ile uğraşarak öğrenmesi üzerinde durmaktadır (Halonen, Brown-Anderson & McKeachie, 2002; Raths, Jonas, Rothstein, & Wassermann, 1967).

Eleştirel düşünme, kapsamlı ve üst düzey entelektüel bir düşünme becerisi olarak diğer düşünme becerileri arasında daha çok ön plana çıkmaktadır. Semerci (2003), eleştirel düşünmenin öğrencilerin konu alanını daha iyi öğrenmesini, bilginin başka alanlara transfer edilmesini ve değerlendirme becerisinin geliştirilmesini sağladığını belirtmektedir. Eğitim sistemi boyunca, öğrencilere bilgi depolanmaktadır; halbuki öğrenme için bilgi ile dolu olmak yararsızdır. Hughes ve Lavery (2004)' nin belirttiği gibi bir birey elde ettiği bilgi üzerinde düşünmeli ve aldığı bilginin gerekliliğini, doğruluğunu ve sonuçlarını değerlendirebilmelidir ve bu

336

noktada eleştirel düşünme kendini göstermektedir. Şahinel (2005) ise, demokratik eğitim sisteminin, katı davranış kalıpları sunmak ve ezberlenmek üzere bilgiyi dayatmak yerine, öğrenilenleri yorumlayabilecek ve düşünmede tarafsız olabilecek öğrenciler yetiştirecek şekilde eleştirel ve yaratıcı düşünmeye dayalı öğrenme ortamlarına ihtiyacı olduğuna işaret etmektedir.

Eleştirel düşünme, etkili öğrenme kadar hızla gelişen ve değişen hayatın ihtiyaçları ile mücadele edebilmek için gerekli olan, bu sebeple eğitim sisteminin her aşamasında kazanılması gereken bir beceri olarak görülmektedir. Çünkü bugünün çağdaş dünyasında, sayısız bilgiyi sunan bilgi teknolojileri, pasif bir şekilde bilgiyi kabul eden değil bilgiyi eleştiren, değerlendiren ve seçen bireylere ihtiyacı ortaya çıkarmaktadır (Şahinel, 2005). Bu noktada, Hughes ve Lavery (2004) de başkalarının değer ve fikirlerinin kölesi olma tehlikesinden korunmak ve entelektüel öz saygıyı geliştirebilmek için eleştirel düşünmenin gerekliliğini vurgulamaktadırlar.

Ayrıca, Şahinel (2005) her vatandaşın sosyal problemlerin farkında olup yorumlayabilmesi ve çözüm sürecinde yer alabilmesi için eleştirel düşünebilmesi gerektiği üzerinde durmaktadır. Aslında, sağlıklı demokrasinin bir ön koşulu da eleştirel düşünebilen, okuyup dinlediğini yorumlayabilen ve farklı bakış açılarına göre olayları değerlendirebilen kişilerden oluşmuş bir kamuoyunun varlığıdır. Günümüzde düşünme becerileri o kadar çok sıklıkla dile getirilmektedir ki, çeşitli sektörler tecrübeli olduğu kadar genel düşünme becerilerine de sahip olan kişileri işe almaları konusunda işverenleri zorlamaktadır. Bu bağlamda, eleştirel düşünmenin geliştirilmesini amaçlayan öğretim programların geliştirilmesi, gerçekçi bir dünya görüşüne sahip, çeşitli görüşlerin farkında olan, sosyal ve milli problemlere dikkat eden ve çözüme katkıda bulunan, eleştirel gözlemci gibi davranan ve demokratik kurum ve hakların savunucusu olan gençlerin yetiştirilmesini sağlayacaktır (Şahinel, 2005).

Bu sebeplerden dolayı, eleştirel düşünme Büyük Britanya, Avustralya, Yeni Zelanda, Amerika Birleşik Devletleri gibi ülkelerin politikalarında üzerinde durulan hayat boyu öğrenme yaklaşımı çerçevesinde tüm bireyler tarafından kazanılması gereken temel beceriler arasında sayılmaktadır (Pithers & Soden, 2000). Türkiye'de de, Türk Milli Eğitimin genel amaçları eleştirel düşünme becerisinin geliştirilmesinin önemine işaret etmektedir.

Bütün bu tartışmalar, eleştirel düşünme becerisinin öğretmen eğitiminde daha da gerekli olduğu gerçeğine götürmektedir; çünkü öğretmen adaylarının bu beceriyi kendi sınıflarında öğretecekleri ve uygulayacakları varsayılıyorsa öncelikle onların bu becerinin ne ve nasıl olduğunu öğrenmeleri gerekmektedir. Onun için, eleştirel düşünme becerisi, öğretmen adaylarının eleştirel düşünme becerilerini geliştirecek ve onların öğretim stratejilerini öğrenmelerini sağlayacak şekilde öğretmen eğitimi programlarının tüm alanları ile bütünleştirilmelidir. Ancak bu şekilde, öğretmen adaylarının düşünme becerilerini kendi öğrencilerine öğretebilmeleri ve onlara model olmaları beklenebilir (Critical Thinking Skills and Teacher Education, 1988; Türnüklü & Yeşildere, 2005).

Bu konuda, Peterson, Kromrey, Borg, ve Lewis (1990), yaptıkları bir çalışmada, problem çözme ve eleştirel düşünme gibi üst düzey düşünme becerileri konusunda eğitilen öğretmenlerin, bu becerileri öğretmede daha iyi bir performans sergilediklerini ortaya çıkarmışlardır. Anlamlı bir etkinin yaratılabilmesi için bu konuda bilinçlilik sağlamanın yeterli olmadığına, bu konuda hem hizmet öncesi hem de hizmet içi eğitimin öğretmenlere ve öğretmen adaylarına verilmesi gerektiğine dikkat çekmektedirler.

Türkiye'de ise, ana konusu mesleki ve teknik eğitim olan 16. Milli Eğitim Şura toplantısında, ilgili eğitim fakültelerinin ezberlemek yerine eleştirel ve bilimsel düşünebilen, araştırabilen, sorgulayabilen, analiz ve sentez yapabilen ve değerlendirebilen öğretmenler yetiştirmeyi amaçlaması gerektiği vurgulanmıştır (Talim ve Terbiye Kurulu, 1999). Daha sonra, 17. Milli Eğitim Şurası'nda da öğretmen adaylarının düşünme becerilerini geliştirecek şekilde eğitim fakültelerinin geliştirilmesi gerektiği ifade edilmiştir (Talim ve Terbiye Kurulu, 2006). Kısaca, bu politikalar ve çalışmalar, bugünün öğrencileri yarının öğretmenleri olarak öğretmen adaylarının düşünme becerilerini geliştirecek şekilde öğretmen eğitimi programlarının ve derslerinin tasarlanması gerektiğine işaret etmektedir.

Bir dersin veya programın, yeni bir stratejiye göre tasarlanması gelişim ve kalite için önemlidir. Fakat gelişime ve kaliteye götüren asıl önemli konu, bu gibi program ve derslerin tasarlanmadan önce, uygulama sürecinde ve sonrasında sistematik bir biçimde değerlendirilmesidir. Çünkü değerlendirme çalışmasının sonuçları, öğrencilere daha kaliteli öğretim fırsatları sunabilmek için nelerin yapılması gerektiğinin altını çizmektedir (Saylor, Alexander, & Lewis, 1981). Bu

sebeple, eğer öğretimin kalitesi arttırılmak isteniyorsa, eğitim kurumlarının geliştirilmesinde vazgeçilmez bir basamak olarak sistematik değerlendirme çalışmaları yürütülmelidir. Bu bağlamda, gelişime yönelik sistematik değerlendirme, (a) ihtiyaçların belirlenmesi, (b) bilinen alternatiflerden en iyi stratejinin seçilmesi, (c) değişikliklerin uygulanırken denetlenmesi ve (d) bu değişimlerin etkisinin ölçülmesi aşamalarını içermektedir (Stufflebeam & Shinkfield, 1985, aktaran Worthen & Sanders, 1987).

Özetle, mevcut yazın ve politikalar, eleştirel düşünmenin her düzeydeki ve her alandaki programlara dahil edilmesini desteklemektedir. Diğer taraftan, Türkiye'de milli eğitim politikalarında ve programlarda düşünme becerilerinin eğitimi vurgulanmasına rağmen (Öğretmen Yetiştirme ve Eğitimi Genel Müdürlüğü, 2006; Talim ve Terbiye Kurulu, 1999, 2004, 2006), uygulamada düşünme becerilerini öğreten yada dersin konu alanı içerisine entegre eden derslerle özellikle öğretmen eğitimi programları içerisinde pek karşılaşılmamaktadır ve bu eksiklik bu konudaki çalışmaların gerekliliğine işaret etmektedir. Aslında, eleştirel düşünmeye dayalı öğretim ile ilgili yapılan çalışmalar olmakla beraber, betimsel olanların kapsamı daha çok öğrencilerin eleştirel düşünme düzeyini belirlemek ile (Dayıoğlu, 2003; Kaya, 1997; Kürüm, 2002; Özdemir, 2005) deneysel çalışmaların kapsamı da bu gibi derslerin akademik başarı ve/veya eleştirel düşünme becerilerinin veya eğilimlerinin geliştirilmesi üzerindeki etkisini tespit etmek ile sınırlıdır. Başka bir ifade ile, deneysel çalışmalarda (Akınoğlu, 2001; Deniz, 2003; Gözgür, 2003; Özçınar, 1996), çıktı değerlendirmesi üzerinde durulmaktadır. Ne yazıkki, bu gibi derslerin kapsamlı bir değerlendirmesini içeren çalışmalar çok azdır. Diğer taraftan, eleştirel düşünme üzerine mevcut yazında, öğretmen eğitimin daha az dikkate alındığı görülmektedir. Bu da eleştirel düşünmenin geliştirilmesi ve bütün öğretim basamaklarına yaygınlaştırılması için öğretmen eğitiminin öneminin olması gerektiği kadar anlaşılmadığını göstermektedir.

Bütün bu sebeplerden dolayı, öğretmen eğitimindeki eğitim bilimleri derslerinden birinde eleştirel düşünmeye dayalı öğretimi uygulayan ve bütün süreci sistematik bir biçimde değerlendiren bir çalışma yazındaki söz konusu eksikliklerin giderilmesine katkı sağlayacak ve benzer çalışmalar yapmak isteyen eğitimcilere ve araştırmacılara ışık tutacaktır. Bu bakış açısından hareketle, bu çalışmada eleştirel düşünme becerileri Gelişim ve Öğrenme dersi konularına entegre edilmiştir. Bu

çalışma, sadece bu dersi eleştirel düşünmeye dayalı tasarlamak için değil aynı zamanda bu dersin tasarlanmadan önce, tasarlanma sürecinde ve sonrasında değerlendirmek için de gerçekleştirmiştir. Başka bir ifadeyle, eleştirel düşünmeye dayalı öğretim ile zenginleştirilen Gelişim ve Öğrenme dersinin ihtiyaçları, tasarımı, uygulaması ve çıktıları değerlendirilmiştir ve bu süreçte, öğretimin geliştirilmesine hizmet eden kapsamlı ve sistematik bir değerlendirme gerçekleştirilmiştir. Yukarıda bahsedilen sistematik değerlendirmenin aşamaları da, bu çalışmanın çerçevesini oluşturmuştur:

(1) ihtiyaçları belirlemek,

(2) ihtiyaçları karşılamaya yönelik dersi tasarlayabilmek için eleştirel düşünme öğretim stratejilerini ve fakültenin kaynaklarını değerlendirmek

(3) yeniden tasarlanan dersin uygulanması sürecini değerlendirmek

(4) yeniden tasarlanan dersin çıktılarını değerlendirmek ve geleneksel öğretimin uygulandığı aynı dersin çıktıları ile karşılaştırmak.

Bu çerçeveye en iyi denk düşen değerlendirme modeli olduğu için, Stufflebeam'in CIPP modeli kullanılmıştır. Bağlam değerlendirmesi aşamasında, Gelişim ve Öğrenme dersine yönelik öğretim ihtiyaçları belirlenmiştir. Girdi değerlendirmesinde, öğrencilerin öğretim ihtiyaçları, tercihleri ve fakültenin mevcut kaynakları dikkate alınarak belirlenen ihtiyaçlara cevap olabilecek bir öğretim stratejisi olarak eleştirel düşünmeye dayalı öğretim yaklaşımına göre ders yeniden tasarlanmıştır. Bu şekilde, dersin hem etkili öğrenmeyi sağlayacağı hem de eleştirel düşünmeye teşvik edeceği varsayılmıştır. Süreç değerlendirmesinde ise, yeniden tasarlanan ders uygulanmış ve öğrencilerin dersin işleyişine yönelik tepkileri ve düşünceleri değerlendirilmiştir. Son olarak, öğrenme ve eleştirel düşünme üzerine bu dersin etkileri değerlendirilmiş ve geleneksel öğretim yaklaşımıyla öğretilen dersin çıktıları ile karşılaştırılmıştır.

Çalışmanın Amacı

Bu çalışmanın amacı, eleştirel düşünmeye dayalı öğretim ile zenginleştirilen Gelişim ve Öğrenme dersinin ihtiyaçlarını, tasarımını, uygulamasını ve sonuçlarını Stufflebeam'in CIPP modelini kullanarak değerlendirmektir.

Bu çalışmada, kendi içinde alt araştırma sorularını da içeren ve CIPP modelin dört aşamasına da karşılık gelen dört temel araştırma sorusu bulunmaktadır. Bunlar;

(1) Gelişim ve Öğrenme dersinin hangi açılardan geliştirilmeye ihtiyacı vardır? (Bağlam değerlendirmesi),

(2) Öğrencilerin öğretimsel ihtiyaçlarını giderecek şekilde bu ders eleştirel düşünmeye dayalı öğretime göre nasıl tasarlanabilir? (Girdi değerlendirmesi),

(3) Öğrenciler açısından yeniden tasarlanan bu ders nasıl uygulanmaktadır? (Süreç değerlendirmesi), ve

(4) Geleneksel öğretimin uygulanıldığı Gelişim ve Öğrenme dersi ile karşılaştırıldığında yeniden tasarlanan bu dersin etkileri nelerdir? (Çıktı değerlendirmesi).

YÖNTEM

Değerlendirme modelinin her bir aşamasında, nitel ve/veya nicel yöntemleri içeren farklı bir araştırma deseni kullanılmıştır. Bağlam değerlendirmesinde ve çıktı değerlendirmesinde hem nitel hem nicel yöntemlerden oluşan karma desenler kullanılmıştır. Bu çalışma, Gazi Üniversitesi Ticaret ve Turizm Eğitim Fakültesi Muhasabe ve Finansman Eğitimi Bölümü'nde gerçekleştirilmiştir. Veriler ise çeşitli nitel ve nicel veri toplama araçları ile farklı veri kaynaklarından elde edilmiştir.

Bağlam değerlendirmesi aşamasında, 2005-2006 akademik dönemde 2., 3. ve 4. sınıfta olan Muhasebe ve Finansman Eğitimi Bölümü öğrencilerinden ve öğretmen olan yeni mezunlardan ihtiyaç analizi anketi aracılığıyla veriler toplanırken, bölümde eğitim derslerine giren öğretim elemanı, bölüm başkan yardımcısı ve MEB'da görevli bir uzman ile bireysel görüşme yapılmıştır.

Girdi değerlendirmesi aşamasında, Gelişim ve Öğretim dersi ile ilgili öğretim programları ve ders kitapları incelenmiş ve fakültenin kaynakları araştırılmıştır. Elde edilen bilgilere göre ders tasarlanmıştır.

Yeniden tasarlanan dersin uygulanması sürecinde deneysel bir çalışma gerçekleştirilmiştir. Bu sebeple, uygulama öncesinde 2006-2007 Güz döneminde bu dersi alan öğrenciler 4 gruba ayrılmış ve bunlardan 2'si deneysel ve 2'si kontrol grup olarak rastgele seçilmiştir. Süreç değerlendirmesinde, deney grubundaki öğrencilerin her hafta doldurdukları öğrenci günlükleri değerlendirilmiştir.

Çıktı değerlendirmesi aşamasında ise, önceden geliştirilip pilot testi yapılan bir başarı testi, öntest, sontest ve kalıcılık testi olarak hem kontrol hem deney grubuna uygulanmıştır. Aynı zamanda, Kökdemir (2003) tarafından Türkçe'ye

341

uyarlaması yapılan Kaliforniya Eleştirel Düşünme Eğilimi Envanteri (California Critical Thinking Disposition Inventory-CCTDI) ön ve son test olarak her iki gruba verilmiştir. Bu testlerden elde edilen sonuçlar, her iki grup için karşılaştırılmıştır. Öğrenci performanslarının gruba ve teste göre değişim gösterip göstermediğini test etmek amacıyla Karma Faktöriyel ANOVA ve ANCOVA ile veriler analiz edilmiştir. Bunların yanı sıra, her gruptan bir grup öğrenci ile 4 odak grup görüşmesi yapılmıştır. Odak grup görüşmeleri ile öğrenci günlüklerinden elde edilen nitel veriler içerik analizi yöntemi ile analiz edilmiştir.

BULGULAR VE TARTIŞMA

Bağlam Değerlendirmesi

Bağlam değerlendirmesi aşamasında, bölüm başkan yardımcısı, bölümde eğitim derslerini veren öğretim üyesi ve MEB'de görevli uzman profesör ile yapılan bireysel görüşmeler öğretmen eğitimindeki önemli ihtiyaç noktalarına ışık tutmuştur. Bu konuda, bölüm başkan yardımcısı, özellikle öğretmen adaylarının yorum ve çıkarımlar yapabilme ve farklı bakış açıları geliştirebilme gibi düşünme becerilerine ihtiyaçları olduğu üzerinde dururken, profesör ve öğretim elemanı öğrencilerin teorileri uygulamaya koyabilmeleri sağlayan öğretmenlik uygulamasının yetersiz kaldığını vurguladılar. Aslında, teorilerin öğretim hayatına uygulanması ve uyarlanması problemi, Eğitim Psikolojisi dersleri ile ilgilenen eğitimcilerin de ana kaygılarından biridir (Kiewra & Gubbels, 1997; Peterson, Clark & Dickson, 1990).

Bunların yanı sıra, görüşme sonuçları, öğretmen eğitimi programlarının ve Gelişim ve Öğrenme dersinin ana hedefleri ile ilgili görüşmecilerin görüşlerini de ortaya çıkarmıştır. Görüşmecilere göre, öğretmen eğitiminin amacı; alan ve pedagoji bilgisine ve öğretim becerisine sahip, Cumhuriyet'in temel ilkelerine uyan, kişilikli iyi vatandaşlar olan ve düşünen öğretmen adayları yetiştirmektir; bu dersin temel hedefleri ise, bireylerin gelişim ve öğrenmelerine ilişkin bilginin doğasını ve bu bilgilerin öğrenme ortamında nasıl uygulanacağını anlamaktır.

Bölümdeki toplam 321 kişiden oluşan 1., 2. ve 3. sınıf öğrencilerine ve 28 kişiden oluşan mezunlara uygulanan ihtiyaç analizi anketi sonuçları, bu dersin yeniden düzenlenmesinde dikkate alınması gereken öğretim ihtiyaçlarını ve problemlerini ve öğrencilerin dersin öğretimine ilişkin tercihlerini ortaya çıkarmıştır.

Dersin hedeflerine ilişkin olarak, öğrencilerin ve mezunların neredeyse hepsi ankette verilen bütün hedeflerin önemli/çok önemli olduğunu düşündüklerini belirtmişlerdir. Özellikle, öğrenciler arasındaki farklılıkları anlayabilme, öğrencilerin gelişimlerine yardımcı olabilme, uygun öğretim ortamı hazırlayabilme ve öğrenilenleri sınıf ortamında uygulayabilme gibi teorinin pratiğe dönüştürülmesi ile ilişkili hedeflere daha çok önem verdikleri görülmüştür. Bütün hedeflerin çoğunluk tarafından önemsenmesi, hem bu hedeflerin hem de bu hedeflerin ilişkili olduğu ders içeriğinin bu derste kapsanması gerektiğine işaret etmiştir. Bu bağlamda, hedeflerin ilişki olduğu konular Gelişim (Gelişim ile ilgili temel kavramlar, fiziksel ve psikomotor, bilişsel, dil, ahlaki ve kişilik gelişimi), Öğrenme (Öğrenme ile ilgili temel kavramlar, davranışçı ve bilişsel öğrenme yaklaşımları) ve Güdülenmedir.

Öğrencilerin ve mezunların çoğu bu hedef ve içeriğin önemli olduğu konusunda hem fikir olmasına rağmen, bu hedeflerin, özellikle bilişsel ve dil gelişimi ile ilgili ve üst düzey düşünme becerisi gerektiren hedeflerin kazanımı konusunda kendileri yeterli görmemektedirler. Üst düzey düşünme becerilerinin kazanımında yaşanan problemler, öğretmen merkezli didaktik öğretimin yaygın olduğu üniversite öncesindeki öğretim hayatının bir sonucu olabilir; çünkü düşünme becerilerinin okullarda geliştirilmesi Türkiye'nin eğitim politikaları ve çalışmaları arasında son yıllarda yer alan bir konudur. Didaktik öğretimin ülke çapında hala yaygın olması sadece Türkiye'ye özgü bir problem değildir. Bu sebeple, öğrencilerin üniversitelere gelmeden önce üst düzey düşünme becerilerinin geliştirilmesinin önemi üzerinde özellikle durulmaktadır (Harrigan & Vincenti, 2004).

Bunun yanı sıra, hedeflerin kazanımdaki problem, bu dersin öğretme-öğrenme sürecinin yetersizliğinden de kaynaklanmış olabilirdi. Bu noktada, dersin işlenişine ilişkin öğrencilerin vermiş olduğu cevaplar da bu yetersizliği ortaya çıkarmıştır; çünkü öğrenmede etkili olduğunu düşündükleri etkinliklerin çoğunun bu derste ya nadiren yer aldığını ya da hiç uygulanmadığı ifade edilmiştir.

Anketlerden elde edilen bu sonuçlar, hedeflerin önemi ile kazanımı arasında ve ders etkinliklerinin/stratejilerinin etkililiği ile derste uygulanma sıklığı arasında farklılıkların olduğunu göstermiştir. Bu durum, dersin öğrenme-öğretme sürecine ilişkin bu sorunların giderilmesine yönelik bir takım önlemlerin alınması gerektiğine işaret etmiştir.

Söz konusu bu önleler konusunda, öğrencilerin ankette sorulan etkinliklerin etkililiğine ilişkin vermiş oldukları cevaplar yol gösterici olmuştur. Öğrencilere ve mezunlara göre öğrenmede ve düşünme becerilerinin geliştirilmesinde etkili olabilecek etkinlikler, her konunun sonunda izleme testinin verilmesi, aktif katılım, yaratıcı düşünmeyi geliştiren etkinlikler, öğrenciler ile öğretmen arasında etkileşimin sağlanması, öğrencilere öğrenmede sorumlulukların verilmesi, grup çalışması, öğrenci merkezli etkinlikler ve dramadır. Bu bulgular, öğrencilerin ve mezunların aktif öğrenme ve düşünme becerisi etkinliklerinin, sınıf içi etkileşim ve katılımın ve izleme testlerinin etkili öğrenmeyi sağlayacağına ve düşünme becerilerini geliştireceğine inandıklarını ortaya çıkarmıştır.

Son olarak, öğrenci başarısının değerlendirilmesinde kullanılabilecek tekniklere ilişkin olarak, vize ve final sınavları için çoğunlukla tercih edilen teknik çoktan seçmeli testtir. Derste çeşitli kuramlar ve konular yer aldığı için, klasik yazılı sınavın daha zor olduğu düşünülmüş olabilir. Struyven, Dochy ve Jahnssens (2005)'ın yaptıkları bir çalışmaya göre, yazılı yoklamalara kıyasla çoktan seçmeli testlerin kolay olması, daha az heyecana ve daha fazla başarı beklentisine sebep olması ve daha az karmaşık olması sebebi ile yüksek öğretimde daha çok tercih edilmektedir. İzleme testleri, sınıf içi katılım ve grup projeleri ise diğer sıklıkla tercih edilen tekniklerdir. Sonuç olarak, bu ihtiyaç analizi, dersin öğretme-öğrenme sürecine ilişkin eksiklikleri ve öğrencilerin bu dersin öğretimine ilişkin tercihlerini ortaya çıkarmıştır. Bu sebeple, bir sonraki adımda öğrencilerin tercihlerini de dikkate alarak, bu dersteki eksiklikleri gidermeye yönelik ders yeniden tasarlanmıştır.

Girdi Değerlendirmesi

Bağlam değerlendirmesinde, dersin öğretimine ilişkin problemleri, ihtiyaçları ve tercihleri ortaya çıkarılmıştır. Girdi değerlendirmesinde ise, bu sonuçların ışığı altında bu problemleri gidermek ve ihtiyaçları karşılamak üzere ders yeniden tasarlanmıştır. Bu sorunları çözmenin, öğretim stratejilerinin geliştirilmesi ve değiştirilmesi ile başarılacağı varsayılmıştır. Bu konuda, mevcut yazın genel olarak eleştirel düşünme becerilerinin geliştirilmesine yönelik öğretme-öğrenme stratejileri ile istenilen hedeflere ulaşılabileceği belirtilmektedir (Eggen & Kauchak, 2001; Halonen, Brown-Anderson, & McKeachie, 2002; Nisbet, 1993; Raths, Jonas, Rothstein, & Wassemann, 1967).

Bu görüşten hareketle, Gelişim ve Öğrenme dersi, eleştirel düşünme becerisine dayalı olarak ve Kemp, Morrison, ve Ross'un öğretim modeli kullanılarak yeniden tasarlanmıştır. Bağlam değerlendirmesi sonuçlarına göre dersin amacı ve hedefleri belirlenmiştir. İçeriğin oluşturulmasında bu ders ile ilgili çeşitli öğretim programları ve ders kitapları incelenmiştir. Dersin öğretme-öğrenme sürecinde ise, dersin hedeflerinin kazanımına yönelik eleştirel düşünme etkinliklerinin planlanmasını içeren Eggen ve Kauchak (2001)'in Tümevarımsal Öğretim Modeli'nden yararlanılmış ve ders planları bu modele göre hazırlanmıştır. Bu arada, ilgili yazın ve bağlam değerlendirmesi sonuçları da öğretme-öğrenme etkinlik ve stratejilerinin belirlenmesine yardımcı olmuştur. Eleştirel düşünmeye yönlendiren soru sorma, örnek olay, düşünme becerisi çalışma yaprakları etkinlikleri (karşılaştırma, karar verme, problem çözme, vb.), bulmaca, poster hazırlama, drama, kavram haritaları, makale eleştirisi ve proje gibi çeşitli aktif öğrenme stratejileri ders kapsamında yer almıştır. Ayrıca öğrencilerin sınıf içi ve dışında yapmış oldukları çalışmaları portfolio içerisinde toplamaları istenmiştir. Bunlarla birlikte, öğretim materyali olarak çalışma yaprakları ve dokümanların yanı sıra tepegöz, projektör ve video gibi fakültedeki mevcut kaynaklar belirlenmiştir. Son olarak, öğrenci başarısının değerlendirilmesinde, vize ve finalin yanı sıra öğrencilerin hazırladıkları portfolio, izleme testi sonuçları, sınıf içi katılım ve ödevler dikkate alınmıştır.

Süreç Değerlendirmesi

Yeniden tasarlanan Gelişim ve Öğrenme dersi, önceden belirlenen iki deneysel grupta uygulamaya konulmuştur. Bu uygulama süresince öğrencilerden her hafta günlük doldurmaları istenmiş, böylece öğrenciler açısından dersin nasıl işlendiğine ilişkin görüşler belirlenmeye çalışılmıştır. Dönem boyunca toplanan 718 öğrenci günlüğünün içerik analizi sonucu beş tema belirlenmiştir: "öğretimin öğrenme üzerindeki etkililiği", "öğretimin düşünme becerileri üzerindeki etkileri", "daha iyi öğrenmeye yönelik metabilişsel beceriler", "zorluklar/problemler", ve "daha iyi öğretim için öneriler".

Elde edilen sonuçlar, mevcut yazının da desteklediği gibi, öğrencilerin çoğu açısından eleştirel düşünmeye dayalı öğretimin öğrenme, anlama, ve düşünme becerilerini kullanma açısından faydalı olduğunu göstermiştir (Beyer, 1988a; Johnson, 2000; Raths, Jonas, Rothstein, & Wassemann, 1967; Zohar & Dori, 2003).

Derste kullanılan aktif öğrenme etkinliklerinin/stratejilerinin ve öğrenme ortamının bu sonuç üzerinde etkili olduğu gözlenmiştir. Çünkü öğrencilere göre, soru sorma, grup çalışması, örnek olay ve tartışma gibi aktif öğrenme stratejileri onların konuları daha iyi öğrenmelerine, kuramları pratikte de uygulayabilmelerine, eksikliklerini fark etmelerine ve konuları tekrar edip hatırlamalarına yardımcı olmuştur. Bu stratejilerden, soru sorma hem düşünme becerilerini geliştirmesi hem de öğrenmeye yardımcı olması açısından zaten üzerinde durulan bir yöntemdir (Paul, 1991). Benzer şekilde, özellikle bilişsel öğrenme yaklaşımı açısından, işbirliğine teşvik eden grup çalışmaları da daha iyi anlamanın sağlanması ve bilişin geliştirilmesi yönünden tercih edilen bir yöntemdir (Beck & Kosnik, 2006; Johnson & Johnson, 1991; Woolfolk, 2004). Örnek olay ve tartışma ile ilgili olarak, bu yöntemlerin eleştirel düşünmeyi geliştirdiği, bireylerin bilişsel ve duyuşsal yapılarının gelişimine destek olduğu, bilginin transfer edilmesini ve anlamlı öğrenmeyi sağladığı belirtilmektedir (McDade, 1995; Weston & Cranton, 1986).

Ayrıca, öğrenciler bu stratejilerin, öğrenmenin ön koşulları arasında varsayılan aktif katılımı ve etkili etkileşimi sağladığını, dersi dikkat çekici hale getirdiğini ve motivasyonlarını arttırdığını belirtmişlerdir. Bu stratejiler arasında soru sorma ve tartışmanın öğrencileri düşünmeye ve öğrenmeye yönlendirecek şekilde sınıf içi etkileşime teşvik ettiği belirtilmektedir (Costa, 1991c; Paul, 1991). Bunun yanı sıra, bu dersin, kolaylıkla konuşabildikleri, düşüncelerini rahatlıkla ifade edebildikleri, kendi sözcüklerini kullanabildikleri, farklı görüşleri fark edebildikleri ve farklı bakış açılarından düşünebildikleri rahat, eğlenceli, etkileşimli ve aktif bir öğrenme ortamı sağladığı da ifade edilmiştir.

Eleştirel düşünme becerilerinin uygulanması açısından, öğrenciler düşünme becerilerini kullanıp kullanmadıklarını açıklamakla birlikte nasıl kullandıkları konusunda genelde fazla açıklama yapmamışlardır. Fakat günlüklerde yer alan cevaplardan, aktif öğrenme stratejilerinin eleştirel düşünmeyi teşvik ettiği anlaşılmıştır. Örneğin, soru sormanın onların kendi fikirlerini üretmelerini ve kuramlarla ilgili tanımları, ilkeleri ve çıkarımları kendi kendilerine tespit etmelerini sağladığı ifade edilmiştir. Günlüklerden elde edilen sonuçlara göre, düşünmeye en çok teşvik eden yöntem, örnek olay çalışmalarıdır. Çünkü öğrenciler genelde örnek olaylar sayesinde konularla olayları ilişkilendirebildiklerini, kendilerini kişilerin ve olayların yerine koyabildiklerini, kişi ve olayları analiz edip sorgulayabildiklerini,

çözüm üretebildiklerini, kendi görüşlerini geliştirebildiklerini, sonuç ve çıkarımlarda bulunabildiklerini ve farklı görüşleri değerlendirebildiklerini belirtmişlerdir.

Günlüklerden elde elden sonuçlara göre, eleştirel düşünmeye dayalı öğretim, zorlukları da beraberinde getirmiştir. Örneğin, bazı öğrenciler heyecanlı ve çekingen oldukları için bu ders ortamından kendi fikirlerini ifade etmede, konuşmada ve katılım göstermede sıkıntı yaşadıklarını belirtirken, bazıları ise bilişsel gelişim, klasik ve edimsel koşullanma gibi konuları anlamakta zorluklar yaşadıklarını ifade etmişlerdir. Dolayısıyla, bu öğrenciler için dersin öğretim şekli onların bu konuları anlamalarına yardımcı olmamıştır. Bazı öğrenciler ise, Piaget'nin görüşü ile Vygotsky'nin görüşlerinin, edimsel koşullanma ile klasik koşullanmanın, yapılandırmacılık ile diğer bilişsel öğrenme kuramlarının ve bilişsel öğrenme kuramları ile davranışçı öğrenme kuramlarının karşılaştırılmasında zorlandıklarını ifade etmişlerdir. Halbuki öğrencilerin çoğu bu karşılaştırma etkinliklerinin onların konuları daha iyi anlamalarına yardımcı olduğunu belirtmişlerdir. Verilen cevaplara göre, bu etkinliklerde yaşanan problemlerin sebeplerinden biri, bu konuları karşılaştırabilecek kadar iyi öğrenmemiş olmalarıydı. Diğer yandan, düşünme becerisi düşük olan öğrenciler, bu gibi üst düzey düşünme gerektiren etkinliklerde zorluklar yaşamış olabilirlerdi. Çünkü benzerlik ve farklılıkları tespit etmek, bilme ve kavrama becerilerine göre daha üst düzey düşünme becerileridir (Brown, 2004; Quellmalz, 1985).

Bu zorluklara ek olarak, öğrencilerin dersteki başarılarını da etkilemiş olabilecek birkaç problemler de ifade edilmiştir. Bu şikayetler, daha çok dönemin başında yaşanan grup üyelerinin birbiri ile anlaşamaması, aynı dönemde aldıkları diğer zor dersler yüzünden ders yüklerinin fazla olması, grup çalışmalarında grup içi fikir alışverişi ve yorumlar için zamanın yetersiz kalmasıdır. Öğrenciler bu şikayetlerin yanı sıra daha iyi öğretim için önerilerde de bulunmuşlardır. Öğrencilerin genelinin dersten memnun olmalarına rağmen, bütün bu şikayetler ve öneriler dönem boyunca dersin daha etkili işlenebilmesi için dikkate alınmıştır. Aslında, günlüklerde önerilen öğretim stratejilerinin, özellikle ilk hafta önerilenlerin bazıları ders daha tasarlanırken planlanmış olan ve sonraki haftalarda uygulanan stratejilerdi. Bu önerilerin dışında, grup çalışmaları için kendi seçtikleri arkadaşları ile grup oluşturmak sıklıkla dile getirilen bir öneriydi. Bu konuda, işbirlikçi öğrenmenin olduğu bir grupta kişilerin birbirini tanımasının, görüşlerini paylaşmak

347

ve yeni fikirler üretmek için öğrencilerin güvenini etkileyen bir faktör olduğu belirtilmektedir (Beck & Kosnik, 2006). Bunun üzerine, öğrencilerin kendi gruplarını oluşturmalarına izin verilmiştir. Bununla birlikte, kimi öğrenciler her hangi bir konunun ya da ödevin öğrenciler tarafından sunulmasını önermişlerdi. Sonraki haftalarda, kişilik gelişimi konusu işlenirken öğrencilerin kendiliğinden hazırlanarak konuyu sunmaları istenmiştir. Öğrenciler bu etkinlik sonucunda memnuniyetlerini belirtmişlerdir. Bunun dışında, başka etkinlikler ve stratejiler önerilmiş olsa da zaman kısıtlılığı sebebi ile onların sadece bir kaçına yer verilebilmiştir. Ders ile ilgili yapılan değişiklerden birisi de öğrencilere verilen ödevlerle ilgiliydi. Bunun üzerine, son haftalarda, öğrenciler ödevlerin fazlalığından şikayet etmeleri üzerine, dönem sonuna yetiştirmeleri gereken bir projeleri olduğu için onların motivasyonlarını düşürmemek adına daha fazla ödev verilmemiştir.

Günlüklerde ortaya çıkan bir başka sonuç ise, öğrencilerin sadece öğrenmede yaşadıkları problemlerin ve zorlukların değil aynı zamanda öğrenmelerine yardımcı olabilmek için ne yapmaları gerektiğinin de farkında olduklarını göstermiştir. Daha iyi öğrenmek ya da anlamadıkları yerlere çalışmak için düzenli ve planlı çalışmak, daha çok okumak, farklı kaynaklar araştırmak, sınıf içi etkinlikleri tekrarlamak, not almak gibi stratejilerden bahsetmişlerdir. Bu farkındalık ise, bir bireyin kendi öğrenme sistemi ve bilişsel süreçleri hakkında bilgi sahibi olması ve ne yapacağı konusunda karar verebilmesi olarak tanımlanan metabilişsel (Duell, 1986; Eggen & Kauchak, 1997; McCown & Roop, 1992; Ormrod, 2008; Slavin, 2003) (Duell, 1986; Eggen & Kauchak, 1997; McCown & Roop, 1992; Ormrod, 2008; Slavin, 2003) bir özelliktir. Diğer yandan, öğrenciler ne yapabileceklerini söylemekle birlikte bunları uygulayıp uygulamadıkları ile ilgili bilgi vermemişlerdir. Halbuki, metabiliş sadece öğrenmek için ne yapılması gerektiğini bilmeyi değil bunların uygulanmasını da gerektirmektedir (Ormrod, 2008).

Çıktı Değerlendirmesi

Bu aşamada, öntest-sontest deneysel çalışmanın çıktıları değerlendirilmiştir. Veriler, dönemin başında, sonunda ve bitiminden 6 hafta sonra uygulanan (kalıcılık testi olarak) başarı testi ile dönemin başında ve sonunda uygulanan CCTDI ve odak grup görüşmelerinden elde edilmiştir. Öğretim elemanı tarafından 3 yıldır uygulanan, ağırlıklı olarak düz anlatım olmak üzere soru sorma, drama ve izleme testinin

kullanıldığı kontrol grubundaki geleneksel öğretimden elde edilen sonuçlar ile deney grubundaki eleştirel düşünmeye dayalı öğretimden elde edilen sonuçlar karşılaştırılmıştır.

Başarı testi sonuçlarına göre, hem kontrol hem de deney gruplarındaki öğrenciler ön test ile karşılaştırıldığında son test üzerinde daha başarılı olmuşlardır. Öğrencilerin genel not ortalamalarının kontrol edildiği Karma Faktöriyel ANCOVA sonuçları ise, öğrencilerin ön ve son testteki ortalama performansları açısından, deney ve kontrol grupları arasında anlamlı bir farklılık bulunmadığını göstermiştir. Akademik başarının yanı sıra, geleneksel öğretim ile karşılaştırıldığında eleştirel düşünmeye dayalı öğretimin kalıcılık üzerindeki etkisi incelendiğinde de, iki grup arasında anlamlı bir farklılık tespit edilememiştir. Bu çalışmada, kalıcılık testi dönem bittikten altı hafta sonra uygulanmıştır. Eğer bu test daha sonraki haftalarda uygulanmış olsaydı ya da ikinci bir uygulaması yapılmış olsaydı, eleştirel düşünmeye dayalı öğretimin kalıcılık üzerine etkisi konusunda daha iyi bilgi sağlanabilirdi. Bu konuda, Adey (1991) eleştirel düşünmeye dayalı öğretimi fen bilgisi alanında uyguladığı çalışmasında, çalışmanın hemen bitiminde uyguladığı başarı testi sonuçları üzerinde deney ve kontrol grupları arasında anlamlı bir fark bulamazken, 1 yıl sonraki uygulamasında iki grup arasında anlamlı farklılıklar tespit etmiştir.

Kısaca, başarı ve kalıcılık testi sonuçları, eleştirel düşünmeye dayalı öğretimin akademik başarı ve bilginin kalıcılığı üzerindeki etkisinin geleneksel öğretimin yarattığı etkiden daha farklı olmadığını ortaya çıkarmıştır. Bu sonuç, bu konuda yapılan çeşitli çalışmaların sonuçları (Akınoğlu, 2001; Deniz, 2003; Kökdemir, 2003; Şahinel, 2001) ile çelişse de, benzer sonuçların elde edildiği bazı çalışmalar da bulunmaktadır (Adey, 1991; Reed, 1998; Reed & Kromrey, 2001; Solon, 2007). Hatta deney grubunda daha düşük performansın gözlenmesi gibi düşünmeye dayalı öğretimin olumsuz etkileri de hala tartışılmaktadır (Lohman, 1986; Woolfolk, 2004).

Bu çalışmaya özgü olarak, Reed (1998)'in çalışmasında gözlendiği gibi, her iki grupta kullanılan öğretim stratejilerinin öğrenmeyi destekleyici olması bu sonuçlar üzerine etkili olmuş olabilir. Reed (1998), Paul'ün eleştirel düşünme modelinin Amerikan Tarihi dersindeki etkisini incelemiş fakat konu bilgisi açısından deney ve kontrol grupları arasında anlamlı bir farklılık bulmamıştır ve bu sonucu, kontrol grubunda da anlamlı öğrenmeyi sağlayacak yöntemlerin kullanılmış

olmasıyla açıklamaya çalışmıştır. Bu durum, mevcut çalışma için de geçerli olabilir çünkü bu çalışmada da, deney grubunda eleştirel düşünmeyi teşvik eden aktif öğrenme etkinlikleri/stratejileri kullanılırken, kontrol grubunda ise öğrenmede ve kalıcılıkta etkili olan drama ve izleme testleri uygulanmıştır. Dramanın öğrenme ve kalıcılık üzerindeki olumlu etkisi ile ilgili çeşitli çalışmalar bulunmaktadır (Andersen, 2002, 2004; Henry, 2000; McNaughton, 2004; Montgomerie & Ferguson, 1999; Morgan & Saxton, 1985). Her hafta uygulanan izleme testleri ile ilgili olarak da Myers ve Myers (2007) yaptıkları bir çalışmada, her hafta sınav olan öğrencilerin akademik başarılarının sadece vize sınavına giren öğrencilerden daha yüksek olduğunu belirlemişlerdir. Ayrıca, çoklu değerlendirme araçlarının öğretmen-öğrenci arasında iletişim sağladığı böylece öğrencilerin performansları ile ilgili dönüt alabildikleri belirtilmektedir (Huba & Freed, 2000, aktaran Myers & Myers, 2007). Odak grup görüşmelerinde de, öğrenciler izleme testleri sayesinde eksikliklerini belirleyebildiklerini, kendilerini değerlendirebildiklerini ve bu yüzden bu testlerin hem konunun tekrarına hem de konunun akılda kalıcılığına etki ettiğini söylemişlerdir. Bu sebeple, kontrol grubunda uygulanan bu yöntemlerin, bu gruptaki öğrencilerin deney grubundaki öğrencilere benzer düzeyde başarı göstermelerine sebep olduğu düşünülebilir. Kısaca, bu yöntemlerin öğrenmedeki etkisi, eleştirel düşünmeye dayalı öğretimin dersteki başarı üzerindeki etkisini gölgelemiş olabilir.

Diğer yandan, eleştirel düşünmeye dayalı öğretim ile ilgili yapılan tartışmalardan birisi de bu öğretim yaklaşımının dersin konularının öğrenimi için gerekli olan zamanı kısıtlayıp kısıtlamadığı üzerinedir (Adey, 1991; Reed, 1998; Reed & Kromrey, 2001; Solon, 2007). Bu çalışmalarda, ders zamanının bir kısmının düşünme becerileri üzerine etkinliklere ayrıldığı ve bu yüzden içerikteki konuların kapsanması için ayrılan zamanın deney gruplarında daha az olduğu belirtilmektedir. Bu sebeple, daha az zaman ayrılmasına rağmen her iki gruptaki öğrencilerin başarı testi üzerindeki performanslarının benzer olması, düşünme becerilerine dayalı öğretimin konuların öğrenilmesini engellemediğinin bir kanıtı olarak görülmektedir (Adey, 1991; Reed, 1998; Reed & Kromrey, 2001; Solon, 2007). Bu bakış açısıyla değerlendirildiğinde, geleneksel öğretime kıyasla, Gelişim ve Öğrenme dersinin eleştirel düşünmeye dayalı öğretiminin, konuların öğrenilmesinde bir kısıtlamaya sebep olmadığı düşünülebilir.

Düşünme becerisi öğretiminin olumsuz etkileri üzerine yaptığı bir derleme çalışmasında, Lohman (1986) daha önce kazanılan bilişsel stratejilerin yeni düşünme ve öğrenme yaklaşımlarının kazanımına yardımcı olduğunu mu yoksa engellediğini mi tartışmaktadır. Ona göre, iyi öğrenen bir öğrenci zaten organize ve otomatik bir bilişsel öğrenme sistemine sahiptir ve öğrenci bunları bastırıp yeni yöntemleri öğrenmek için çaba gösterse de bu sistem otomatik bir biçimde işlemeye devam edecektir. Bu sebeple, düşünmeye dayalı öğretimin süresinin etkisi üzerine çalışmaların yapılması gerektiğini önermektedir çünkü bu tür yeniliklerin etkisinin uzun dönemde görülebileceğini düşünmektedir. Mevcut çalışmada ise, öğrenciler verilen etkinlikler üzerinde aktif bir biçimde çalışmış olsalar bile bir dönem içerisinde eleştirel düşünmeye dayalı öğretime tam olarak adapte olamamış olabilirler ve bu sebeple kendi sıradan öğrenme stratejilerini kullanmaya devam etmiş olabilirler. Onun için performansları, kontrol grubundaki öğrencilerden daha farklı olmamış olabilir. Halbuki, bir dönemden daha uzun süre ile bu öğretim gerçekleşmiş olsaydı, daha çok uygulama sonucunda öğrenciler bu öğretime adapte olabilirlerdi ve bu öğretimin öğrenme üzerindeki etkisi gözlenebilirdi.

Başarı ve kalıcılık testlerinin yanı sıra, odak grup görüşmeleri sonuçlarına göre, kontrol grubundan görüşülen öğrencilere kıyasla, deney grubundan sadece birkaç öğrenci kendilerini bu dersin konularında yetersiz görmektedir. Çoğu ise, içerisinde kavram haritalarının, ödevlerin, sınıf içi etkinliklerin ve örnek olayların yer aldığı eleştirel düşünmeye dayalı öğretimin, onların konuları çalışmalarına ve tekrar etmelerine, konuları birbiri ve gerçek hayatla ilişkilendirmelerine, ön çalışma yapmalarına ve konuları öğretim ortamında nasıl uygulayabileceklerini anlamalarına yardımcı olduğunu düşünmektedir.

Kontrol grubundan görüşülen ve kendilerini konularda yetersiz gören öğrenciler, çalışmadıkları, anlamadıkları, uygulama yapmadıkları, karıştırdıkları ve önemsemedikleri konularda kendilerini yetersiz gördüklerini ifade etmişlerdir. Kontrol grubunda uygulanan drama ile ilgili olarak, bir taraftan bazı öğrenciler bu yöntemin görsellik sağladığını, kuramları gerçek hayatla ilişkilendirildiği ve eğlendirerek dikkatleri çektiği için öğrenmede ve kalıcılıkta etkili olduğunu ifade ederken, diğer taraftan bazıları dramanın eğlendirmekten başka bir şeye yaramadığını çünkü öğrencilerin kuramı anlamak ve kuramı dramaya iyi bir şekilde uyarlamak yerine öğrencileri nasıl güldürebiliriz üzerine yoğunlaştıklarını söylemişlerdir.

351

Görüşmelerde ifade edilen bir diğer konu ise, kontrol grubunda aktif katılımın olmaması ile ilgiliydi. Öğrenciler, dramada rol almak ve sorulan sorulara cevap vermek dışında pek fazla derse katılım göstermediklerini belirtmişlerdir.

Eleştirel düşünmeye dayalı öğretimin eleştirel düşünme eğilimi üzerine etkisine ilişkin, CCTDI ön ve son test sonuçları, dönem içinde her iki gruptaki öğrencilerin eleştirel düşünme eğilimlerinin ortalama olarak anlamlı derecede arttığını göstermiştir. Fakat ön test ve son testten elde edilen ortalama puanlara göre, deney grubundaki öğrencilerin dönem içindeki gelişimlerinin kontrol grubundakilerden farklı olmadığı tespit edilmiştir. Paul'ün eleştirel düşünme modeline dayalı öğretimin eleştirel düşünme eğilimi üzerine etkisini çalışan Reed (1998) ve Reed ve Kromrey (2001) de, CCTDI ortalama puanlarının deney ve kontrol grupları arasında anlamlı bir farklılık göstermediğini bulmuşlardır. Hatta deney grubundaki öğrencilerin eleştirel düşünme eğilimlerinin de dönem içerisinde anlamlı bir değişim göstermediğini belirlemişlerdir. Reed'in çalışmasının bulguları ile karşılaştırıldığında, şu anki çalışmanın en azından dönem içindeki gelişim açısından daha etkili bir sonuç sergilediği söylenebilir.

Bunların yanı sıra, bu çalışmanın sonuçları ile tutarlı olmayan çeşitli çalışmalar da bulunmaktadır. Bunlardan biri olan Miri, David, ve Uri (2007)'nin çalışmasında, bir yıl süre ile uygulanan üst düzey öğrenmeye yönelik öğretim stratejilerinin, öğrencilerin eleştirel düşünme eğilimlerini kontrol grubundan anlamlı derecede farklı olarak geliştirdiği tespit edilmiştir. Eğer bu çalışmada, Miri ve diğerleri (2007)'nin çalışması gibi 1 yıl süre ile uygulanmış olsaydı sonuçlar daha farklı olabilirdi. Çünkü, eleştirel düşünme becerileri ve eğilimleri olmak üzere iki boyutu olan eleştirel düşünmenin, kısa sürede kazanılamayacak kadar karmaşık bir beceri olduğu ve bu sebeple bunun zaman, çaba ve uygulama gerektirdiği kabul edilmektedir (Van Gelder, 2005). Bu yüzden, eleştirel düşünme becerileri ve eğilimlerinin gelişimi için bir akademik dönem gruplar arasında farklılık yaratacak kadar yeterli olmamış olabilir.

Diğer yandan, öğrenciler dönem içerisinde gelişim gösterse de, CCTDI'dan elde edilen ortalama puanlar, bu ölçeğin Türkçe'ye uyarlama çalışmasını yapmış olan Kökdemir (2003) tarafından yeniden düzenlenen puanlama kriterlerine göre hala düşüktür (240'dan küçük). Bu durum, sadece Ticaret ve Turizm Meslek Lisesi mezunlarının kabul edildiği bu fakültenin öğrenci profilinden kaynaklanabilir.

352

Maalesef, mezunlarının üniversiteye girişteki sıkıntılarından dolayı, meslek liseleri düşük başarılı çocuklarını bir meslek sahibi olmaları amacıyla kaydettirmek isteyen aileler tarafından tercih edilmektedir. Öğrencilerin özellikleri ile ilgili olarak, yaşadıkları toplumun oldukça etkili olduğu bilinmektedir. Düşünme becerileri açısından da, bir kişinin düşünme becerisinin ve eğilimin yaşadığı toplumdan etkilendiği; bir başka ifade ile o toplumun eleştirel düşünmeye yönelik kültürel tabularının ve duyarlılığının eleştirel düşünme becerisinin gelişimini ve kullanılmasını etkilediği iddia edilmektedir (Halx & Reybold, 2005; Pithers & Soden, 2000). Ne Türk eğitim sistemi içerisinde özellikle meslek liselerinde ne de aile hayatında eleştirel düşünmenin desteklenmesi sık karşılaşılan bir durum değildir. Onun için, bu durum bu çalışmadaki öğrencilerin eleştirel düşünme eğilimlerinin düşük olmasında önemli bir etmen olabilir.

Bunun yanı sıra, elde edilen bu sonuçlarda kullanılan ölçeğin yeterliliğinin de bir etkisi olabilir. Ne yazık ki Türkiye'de eleştirel düşünmeye yönelik geliştirilmiş standart ve kapsamlı bir ölçek bulunmamaktadır. Sadece birkaç araştırmacının kendileri bir ölçek geliştirmiştir (Semerci, 1999; 2000) ya da batı ülkelerinden özellikle A.B.D.'deki ölçekler Türkçe'ye uyarlanmaya çalışılmıştır (Evcen, 2002; Kökdemir, 2003). Evcen (2002), Watson-Glaser Critical Thinking Appraisal ölçeğini Türkçe'ye adapte etmeye çalışmıştır ama çok düşük güvenirlik katsayıları elde etmiştir. Kökdemir (2003) ise bu çalışmada da kullanılan CCTDI'nin Türkçe versiyonunu geliştirmiştir ve daha yüksek güvenirlik elde etmiştir (.88 ölçeğin tamamı için ve .61-.78 alt ölçekler için). Fakat, bu çalışma sonucunda oluşan ölçekteki madde sayısı orijinal ölçekten daha azdır ve Türkçe'ye çevirilen maddelerin bazıları açık ve anlaşılır değildir. Bu yüzden, bu çalışmada kullanılan CCTDI'nin Türkçeye adapte edilmiş versiyonun yeterliliği tartışmaya açıktır.

CCTDI'dan elde edilen sonuçlar dışında odak grup görüşmelerinden elde edilen sonuçlar, eleştirel düşünmeye dayalı öğretimin eleştirel düşünme becerilerinin kullanımında etkili olarak algılandığını ortaya çıkarmıştır. Öğrenci günlüklerinden elde edilen sonuçlarla tutarlı olarak, görüşmelerde de derste kullanılan etkinliklerin/stratejilerin, mantıklı sonuçlara kısa sürede ulaşabilmek için stratejik düşünebilme, konular arasında ilişki kurabilme, farklıları fark edebilme, kendi düşüncelerini sorgulayabilme, başkalarının görüşlerinin farkına varabilme, yorum yapabilme, bir görüşü savunabilme, kuramları değerlendirebilme ve farklı bakış

açılarından bakabilme gibi çeşitli eleştirel düşünme becerilerini kullanmaya teşvik ettiği ifade edilmiştir. Verilen cevaplara göre, bu ekinlikler/stratejiler örnek olay çalışmaları, karşılaştırma yapma gibi düşünme becerilerini uygulamaya yönelik çalışma yaprakları, bireysel ve grup çalışmaları, kavram haritaları, günlükler, makale eleştirisi ve projedir.

Bununla birlikte, görüşülen öğrenciler, bu dersin onların öğretim becerilerine de katkı sağladığını düşündüklerini göstermiştir. Her iki gruptaki öğrenciler benzer katkılardan bahsetseler de deney grubundaki öğrenciler bu dersin onların kişisel ve mesleki gelişimlerine katkıları ile ilgili hem daha çok açıklama yapmışlar hem de daha farklı katkılardan bahsetmişlerdir. Verilen cevaplara göre, mesleki gelişim açısından, bu ders onların bireyin gelişimi ve öğrenmesi ile ilgili gereken bilgiyi kazanmalarına, öğrencilerin davranış ve ihtiyaçlarını anlamalarına, nasıl ve neyi öğreteceklerine, nasıl davranıp nasıl iletişim kuracaklarına ve problemlerle nasıl baş edebileceklerini anlamalarına yardımcı olmuştur. Hatta deney grubundan görüşülen bazı öğrenciler, derste gördükleri etkinlikleri öğretmen olduklarında kendi sınıflarında da uygulayacaklarını söylemişlerdir. Aslında tam da bu sonuç, eleştirel düşünmeye dayalı öğretimin öğretmen eğitimi için neden daha önemli olduğunun altını çizmektedir (Critical Thinking Skills and Teacher Education, 1988; Paul, Elder & Bartell, 1997). Ayrıca, bu dersin kendi düşüncelerini rahatlıkla ifade edebilme, kendine güvenlerini geliştirebilme ve insanların önünde konuşabilme gibi kişisel gelişimlerine de katkı sağladığını ifade etmişlerdir.

Görüşmelerde, bazı şikayetleri dile getirmiş olsalar da genelde öğrencilerin derse karşı olumlu bir tutum içerisinde olduğu gözlenmiştir. Çünkü deney grubundan görüşülen öğrenciler, dersteki öğrenme ortamından memnun olduklarını ve diğer derslerde de aynı ortamlarla karşılaşmış olmayı istediklerini söylemişler ve bu yüzden deney grubunda oldukları için mutlu olduklarını belirtmişlerdir. Hatta kontrol grubundan iki öğrenci, deney grubunda uygulanan yaklaşımın daha faydalı olduğunu düşündükleri için o grupta yer almış olmayı istediklerini ifade etmişlerdir. Verilen cevaplara göre, bu olumlu tutumların altında yatan nedenler, dikkat çekici, ilginç, eğlenceli ve rahat bir öğrenme ortamının, düşünmeye teşvik eden bir atmosferin, aktif derse katılımın, daha iyi iletişim ve etkileşimin olmasıdır. Aslında bu sonuçlar, öğrenci günlüklerinde de dile getirilen ifadelerdir.

Diğer yandan, çeşitli etkinliklerin uygulanmasından dolayı dersin çok yoğun olması ve her hafta ödevlerin verilmesi gibi şikayetler de dile getirilmiştir. Daha önceden bu şekildeki öğrenci merkezli bir ortamla ya da aktif öğrenme etkinlikleri ile karşılaşmamış olmaları onların etkinliklerden ve ödevlerden yorulmalarına ve sıkılmalarına neden olmuş olabilir (Harrigan & Vincenti, 2004). Bu gibi deneysel çalışmalarda, değişime karşı öğrencilerin olumsuz tepki göstermesi gibi tutumlarla karşılaşılmaktadır (Struyven, 2005). Bunun yanı sıra, görüşmelerde öğrenciler, aynı dönemde birden fazla zor dersi bir arada aldıklarını ve bunun onları daha da yorduğunu söylemişlerdir. Dolayısıyla, bu durum onları daha da zorlamış, yormuş ve motivasyonlarını düşürmüş olabilir.

Geleneksel öğretimin olduğu kontrol grubundaki öğrencilerin neredeyse yarısı dersten memnun olduklarını söyleseler de, diğerleri bu dersin daha çok öğretmen-merkezli olmasından, drama ve sorulara cevap verme dışında aktif katılımın olmamasından, öğrenmede sorumluluk almamalarından şikayetçi olmuşlardır. Bu durum onların çeşitli önerilerde bulunmasına sebep olmuştur. İlginç olan ise, önerdikleri yöntem ve stratejilerin deney grubunda hali hazırda uygulanmış olan stratejiler olmasıdır. Cruickshank, Bainer ve Metcalf (1995)'a göre, sınıf içinde çeşitliliğin olması öğrencilerin motivasyonlarını, dikkatlerini, katılımlarını ve dolayısıyla öğrenmelerini arttıran bir etmendir. Bu görüş dikkate alındığında, drama ve izleme testi dışında kontrol grubunda çeşitliliğin olmaması onların katılımını ve motivasyonlarını düşürmüş olabilir ve bu yüzden derse karşı olumlu bir tutum içerisinde olmamış olabilirler.

Sonuç olarak, çıktı değerlendirmesi sonuçları, eleştirel düşünme becerileri ile zenginleştirilen bir öğretimin akademik başarı, kalıcılık ve eleştirel düşünme eğilimi üzerinde geleneksel öğretimden daha farklı bir etkiye sahip olmadığını göstermiştir. Diğer yandan, öğrenci günlükleri ve odak grup görüşmeleri, öğrencilerin bakış açısından bu dersin, öğretim ve düşünme becerileri, derse katılım ve derse yönelik tutum üzerinde olumlu etkileri olduğuna işaret etmiştir. Aslında, bu değerlendirme çalışmasının amacı Gelişim ve Öğrenme dersinin geliştirilmesini sağlamaktı. Her ne kadar nicel veriler, akademik başarı ve eleştirel düşünme eğilimi üzerinde eleştirel düşünmeye dayalı öğretimin anlamlı bir etkisinin olmadığını göstermiş olsa da, nitel verilerin ortaya çıkardığı bu öğretime yönelik olumlu çıktılar göz ardı edilmemelidir. Bir başka ifade ile, öğrencilerin duyuşsal gelişimi üzerindeki etkisi de dikkate

alınmalıdır. Aslında, eleştirel düşünmeye dayalı öğretimin akademik başarı ve eleştirel düşünme eğilimi üzerindeki etkisi uzun dönemde ve sürekli çalışma sonucunda görülebilir. Kirkwood (2000) ve Lohman (1986) ancak bu şekilde istenen sonuçların yakalanabileceğini belirtmektedirler.

Öneriler

Eleştirel düşünmeye dayalı öğretimin akademik başarı ve eleştirel düşünme üzerindeki etkisinin ortaya çıkarılması için, bu öğretim daha uzun bir süre uygulanabilir veya programdaki başka derslere yaygınlaştırılabilir. Öğretmen eğitimindeki önemi kabul edilirse, eğitim fakültelerindeki diğer derslere de uygulanabilir. Hatta, eleştirel düşünme Milli Eğitimin hedefleri arasında yer alıyorsa, her öğretim basamağındaki programlara uygulanabilir. Yalnız, bu öğretimin yaygınlaştırılması, bu dersi veren öğretmenlerin ve öğretim elemanlarının eğitimini gerektirebilir. Bu sebeple, hizmet içi eğitim programları hazırlanabilir. Eleştirel düşünme öğretimi zaman gerektiren bir öğretimdir. Bu sebeple, etkinin ortaya çıkarılması için öğrenci sayısının ve konuların az olması önemlidir. Diğer yandan bu çalışmada, CIPP modelinin tam olarak uygulanmış olması, dersi geliştirmeye yönelik her aşamada faydalı bilgilerin elde edilmesini sağlamıştır. Bu sebeple, öğretim kurumlarının/programlarının/derslerinin geliştirilmesine yönelik değerlendirme çalışmaları yapılmalı ve bu çalışmalarda bu model kullanılacaksa zorunlu olmasa da tam olarak uygulanması önerilmelidir. Derslerin/programların geliştirilmesinde ihtiyaç analizi gözden kaçan bir noktadır. Halbuki, ihtiyaç analizi ne yapılması gerektiği ile ilgili önemli noktaların altını çizmektedir. Bu çalışmada da, bağlam değerlendirmesi aşamasında ihtiyaç analizi gerçekleştirilmiş ve dersin eksikliklerine yönelik önemli bilgiler elde edilmiştir. Bu sebeple, bu tür çalışmalarda ihtiyaç analizinin uygulanması teşvik edilmelidir.

Bu çalışmada CIPP modeli sadece bir derste uygulanmıştır. Daha geniş bir ekip kurularak, fakültedeki öğretmen eğitimi programı genel olarak değerlendirilebilir. Bu çalışmada, CIPP modeli uygulanırken farklı araştırma desenleri kullanılmıştır. Benzer değerlendirme çalışması yapmak isteyen araştırmacılar için bu çalışmanın araştırma deseni bir çerçeve oluşturabilir. Özellikle hem nitel hem de nicel yöntemlerin kullanıldığı karma desenler öğrenme ortamı ve

etkileri ile ilgili çeşitli araçlarla zengin bilgilerin elde edilmesini sağlamıştır. Bu yüzden, sonraki araştırmalarda karma desenlerin kullanımı teşvik edilmelidir. Bu çalışmada, çıktı değerlendirmesi aşamasında, istatistiksel analizler gerçekleştirilirken sadece öğrencilerin genel not ortalamaları kontrol edilmiştir. Sonraki çalışmalarda, öğrencilerin kültürel ve karakteristik farklı özellikleri de kontrol edilebilir. Akademik başarı ve eleştirel düşünme eğilimine ilişkin başarı ve kalıcılık testi ile CCTDI'dan elde edilen sonuçlar üzerinde, bu fakültedeki öğrencilerin özelliklerinin etkisinin olup olmadığının tespit edilmesi için bu çalışma başka fakültelerde de uygulanıp sonuçları karşılaştırılabilir. Uygulamanın uzun vadedeki etkisini görmek için kalıcılık testi, uygulama bittikten 6 hafta sonra değil de daha geç haftalarda ya da ikinci bir kez daha uygulanabilir, çalışma bittikten sonraki aylarda öğrencilerle görüşme yapılabilir ya da öğrenciler gözlenebilir. Eleştirel düşünme becerilerini ve eğilimini ölçmede kullanılan ölçeklerin yetersizliği de bir başka problemdir. Bu sebeple, yurtdışındaki ölçeklerin Türkçe'ye uyarlama çalışmalarının yanı sıra ülkemize özgü kapsamlı, standardize edilmiş güvenilir ve geçerli ölçekler geliştirilmelidir. Ayrıca sadece genel düşünme becerileri değil konu alanına (Psikoloji, Matematik, Tarih vb.) özgü ölçekler de geliştirilmelidir.

APPENDIX V

CURRICULUM VITAE

PERSONAL INFORMATION

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EDUCATION

Degree	Institution	Year of Graduation
MS	University of California-Santa Barbara, Educational Measurement and Statistics	2000-2001
MS	Hacettepe University, Technical Demography	1998-2000 (Not completed)
BS	Middle East Technical University, Statistics	1993-1998
High School	Mustafa Kemal High School, Ankara	1990-1993

WORK EXPERIENCE

Year	Place	Enrollment
2001-Present	Gazi University, The Faculty of Commerce and Tourism Education	Lecturer
1999-2000	Hacettepe University, Institute of Population Studies	Research Assistant

FOREIGN LANGUAGES

Advanced English

PUBLICATIONS

Yücel Toy, B. & Güneri Tosunoğlu, N. (2007). Sosyal bilimler alanındaki araştırmalarda bilimsel araştırma süreci, istatistiksel teknikler ve yapılan hatalar. *G. Ü. Ticaret ve Turizm Eğitim Fakültesi Dergisi, 1*, 1-20.

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PROJECTS

- "Development of In-service Training Programs in Direct Selling", LLP/Erasmus Staff Mobility Project, Hungary, 2008. (As aTrainee)

- "Research on the E-Business Models, Applications and Their Adaptation to SMEs in Turkey", LLP/Leonardo da Vinci Staff Mobility Project, Finland, 2006-2007.(As a Beneficiary)

- "Modernization of Vocational Education and Traning in Turkey Project", 2004-2006. (As an Expert/Consultant)

- "Strengthening Population and Development Education in Turkey Project", 2001. (As a Project Assistant)