STUDENTS' PERCEPTIONS AND MOTIVATIONS OF A BLENDED COURSE GUIDED BY GOOD PRACTICE PRINCIPLES AND MOTIVATION

A THESIS SUBMITTED TO
THE GRADUATE SCHOOL OF NATURAL AND APPLIED SCIENCES
OF
MIDDLE EAST TECHNICAL UNIVERSITY

BY

ASLIHAN KOCAMAN KAROĞLU

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR
THE DEGREE OF DOCTOR OF PHILOSOPHY
IN
COMPUTER EDUCATION AND INSTRUCTIONAL TECHNOLOGY

JUNE 2009

Approval of the thesis:

STUDENTS' PERCEPTIONS AND MOTIVATIONS OF A BLENDED COURSE GUIDED BY GOOD PRACTICE PRINCIPLES AND MOTIVATION

submitted by **ASLIHAN KOCAMAN KAROĞLU** in partial fulfillment of the requirements for the degree of **Doctor of Philosophy in Computer Education and Instructional Technology Department, Middle East Technical University** by,

Prof. Dr. Canan Özgen _____
Dean, Graduate School of **Natural and Applied Sciences**

Prof. Dr. M. Yaşar Özden _____
Head of Department,
Computer Education and Instructional Technology Dept., METU

Prof. Dr. M. Yaşar Özden _____
Supervisor,
Computer Education and Instructional Technology Dept., METU

Assoc. Prof. Dr. Ercan Kiraz _____
Co-Supervisor, **Educational Sciences Dept., METU**

Examining Committee Members:

Prof. Dr. Hafize Keser _____
Computer Education and Instructional Technology Dept., Ankara University

Prof. Dr. M. Yaşar Özden _____
Computer Education and Instructional Technology Dept., METU

Prof. Dr. Ömer Geban _____
Secondary Science and Mathematics Education Dept., METU

Assoc. Prof. Dr. Kürşat Çağıltay _____
Computer Education and Instructional Technology Dept., METU

Assoc. Prof. Dr. Erdinç Çakıroğlu _____
Elementary Education Dept., METU

Date: 25.06.2009

I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.

Name, Last Name: Aslıhan KOCAMAN KAROĞLU

Signature :

ABSTRACT

STUDENTS' PERCEPTIONS AND MOTIVATIONS OF A BLENDED COURSE GUIDED BY GOOD PRACTICE PRINCIPLES AND MOTIVATION

Kocaman Karoğlu, Aslıhan

Ph.D., Department of Computer Education and Instructional Technology

Supervisor: Prof. Dr. M. Yaşar Özden

Co-supervisor: Assoc. Prof. Dr. Ercan Kiraz

June 2009, 259 pages

The purpose of this study was to investigate the perceptions of learners in the blended course relative to the use of Seven Principles for Good Practice in Undergraduate Education. Additionally through the motivational requirements specified by Keller's ARCS motivational design model, students' motivations were analyzed. Thus the study was designed to determine student motivation in a blended environment in relation to Keller's ARCS motivational design model. For these research aims, a traditional course was redesigned with the support of online applications by taking Good Practice Principles as the framework.

A triangulation mixed method approach was utilized as the primary design of the study by employing both qualitative and quantitative methods in a single study.

The study participants included 47 preservice teachers in an undergraduate teacher education program of Computer Education and Instructional Technology Department in the Middle East Technical University who took the course (School Experience I) in blended design mode in 2005-2006 spring semester. Qualitative and quantitative data were collected through three different surveys, student interviews, and forum transcripts. The data were analyzed concurrently according to both qualitative and quantitative data analysis techniques.

The analyses of qualitative and quantitative data showed that students' perceptions in the blended course and perceptions in relation to each good teaching principles were mostly positive. Results reveal that students perceive six of the principles including student faculty contact, cooperation, time on task, diversity and ways of learning, feedback, and active learning helpful to their learning. Additionally, the students think that the other one principle which is expectations needs to be improved. In addition, high motivation scores were gathered in the blended course. Results show that attention, relevance, confidence, and satisfaction subscores revealed significantly higher levels of motivation among students.

Keywords: Blended Learning Environments, Good Practice Principles, Web-Based Instruction, Motivation, ARCS Motivational Design Model

ÖZ

ÖĞRENCİLERİN İYİ UYGULAMA PRENSİPLERİ VE GÜDÜLENME İLE YAPILANDIRILMIŞ KARMA BİR DERSE KARŞI ALGILARI VE GÜDÜLERİ

Kocaman Karoğlu, Aslıhan
Doktora, Bilgisayar ve Öğretim Teknolojileri Eğitimi Bölümü
Tez Yöneticisi: Prof. Dr. M. Yaşar Özden
Ortak Tez Yöneticisi: Doç. Dr. Ercan Kiraz

Haziran 2009, 259 sayfa

Bu çalışmanın amacı lisans eğitiminde İyi Uygulama için Yedi Prensip (Seven Principles for Good Practice)'in kullanılmasıyla bağlantılı olarak karma bir öğrenme ortamında öğrencilerin algılarını araştırmaktır. Ek olarak Keller'ın ARCS (ARCS Motivational Design Model) motivasyon modeli ile belirlenmiş güdülenme ihtiyaçları doğrultusunda, öğrencilerin güdülenme düzeyleri araştırılmış ve analiz edilmiştir. Bu nedenle de çalışma, Keller'ın ARCS motivasyon modeliyle bağlantılı olarak, öğrencilerin karma öğrenme ortamındaki güdülenmelerini belirlemeyi de amaçlamıştır. Bütün bu hedeflerle, geleneksel yollarla eğitim verilen bir ders çevrimiçi uygulamaların da desteğiyle, İyi Uygulama Prensiplerini çerçevesinde yeniden tasarlanmıştır.

Çalışmada, hem nitel hem de nicel araştırma yöntemlerinin bir arada ve tek çalışmada kullanılmasını içeren çeşitlemeli karma araştırma yöntemi (triangulation mixed method approach) kullanılmıştır. Çalışma örneklemini, Orta Doğu Teknik Üniversitesi, Bilgisayar ve Öğretim Teknolojileri Eğitimi Bölümü'nde 2005-2006 yılı bahar döneminde lisans eğitiminde birinci sınıfta okuyan ve Okul Deneyimi I dersini karma öğrenme ortamında alan 47 öğretmen adayı oluşturmaktadır. Nitel ve nicel veriler üç farklı anket, öğrencilerle yapılan görüşmeler ve tartışma listesi çıktıları yoluyla toplanmıştır. Verilerin analizi de hem nitel hem nicel analiz yöntemleriyle yapılmıştır.

Nitel ve nicel sonuçlara göre, öğrencilerin karma öğrenme ortamına ve her bir iyi uygulama prensibine yönelik algıları olumlu yönde olmuştur. Öğrenciler yedi temel prensipten "öğrenci-fakülte arası iletişim", "işbirliği", "zamanlama", "çeşitlilik ve öğrenme yolları", "geribildirim" ve "aktif öğrenme"yi içeren altısının karma ortamdaki öğrenmelerini olumlu etkilediğini belirtirmişlerdir ve öğrencilerin bu belirlenmiş prensiplere karşı algıları olumlu olmuştur. Sonuçlar, öğrencilerin yalnızca "beklenti" unsuruna yönelik algıların diğerlerine göre daha az olumlu olduğunu ve bu unsurun karma ortamda geliştirilmesi gerektiğini belirtmişlerdir. Ek olarak, karma öğrenme ortamında yüksek güdülenme sonuçları elde edilmiştir. Sonuçlar, karma öğrenme ortamında güdülenme alt ögeleri olan "dikkat", "uygunluk", "güven" ve "tatmin"in öğrenciler tarafından önemli ölçüde yüksek düzeyde olduğunu göstermiştir.

Anahtar Kelimeler: Karma Öğrenme Ortamları, İyi Uygulama Prensipleri, Web-Tabanlı Öğrenme, Güdülenme, ARCS Motivasyon Modeli

…to my parents, Türkan-Ali Kocaman; for showing me a vision, their endless love, and support.

…to my brother, Burakhan; for his energy, patience, and anytime making me laugh.

…to my husband, Ferdi; for his love, understanding, and encouragement.

Thank you all for believing me…

ACKNOWLEDGMENTS

I would like to express my thanks to the people who have been very helpful to me during the time to write this thesis and also during Ph.D. process. First of all, I would like to thank my thesis supervisors Prof. Dr. M. Yaşar Özden and Assoc. Prof. Dr. Ercan Kiraz for their guidance, support and encouragement throughout the study. Secondly I express my sincere appreciation to my thesis follow-up committee members, Assoc. Prof. Dr. Kürşat Çağıltay, and Assoc. Prof. Dr. Erdinç Çakıroğlu for their comments and suggestions in this long period of study. I would also like to express my appreciation to examination committee members Prof. Dr. Hafize Keser and Prof. Dr. Ömer Geban for their valuable participation and comments.

I wish to express my sincere thanks to my instructors Assoc. Prof. Dr. Soner Yıldırım, Assoc. Prof. Dr. Zahide Yıldırım, and Dr. Hasan Karaaslan in Computer Education and Instructional Technology Department at Middle East Technical University. Also want to express my appreciation to members of Educational Technology Program of Purdue University. Particularly I am deeply grateful to Prof. Dr. Peggy A. Ertmer for her advice, encouragement and guidance.

I am also thankful to my friends and colleagues particularly Nuray Gedik and Yüksel Göktaş, Ayşegül Bakar Çörez, Emine Şendurur, Polat Şendurur, Halil Ersoy, Levent Durdu and other friends in the Middle East Technical University for

their support and encouragement. Also I would like to thank to my close friend Burcu Koç for her friendship and support.

Finally, I would like to express my endless and loving thanks to my mum and dad, my brother and my husband for their understanding, great support and patience.

TABLE OF CONTENTS

LIST OF TABLES

TABLES

LIST OF FIGURES

FIGURES

LIST OF ABBREVIATIONS

#: Number

%: The Percent Sign

ARCS: Keller's Motivational Design Model with components of Attention, Relevance, Confidence and Satisfaction

CEIT: Computer Education and Instructional Technology

CIS: Course Interest Survey

f: Frequency

GPP: Good Practice Principles

IMMS: Instructional Material Motivation Survey

K-12: Kindergarten through the Twelfth Grade

M: Mean

METU: Middle East Technical University

MS: Microsoft

P1: Principle 1: Student-Faculty Contact

P2: Principle 2: Cooperation

P3: Principle 3: Active Learning

P4: Principle 4: Feedback

P5: Principle 5: Time on Task

P6: Principle 6: Expectations

P7: Principle 7: Respects Diverse Talents and Ways of Learning

SD: Standard Deviation

SPSS: Statistical Package for the Social Sciences

CHAPTER 1

INTRODUCTION

The introduction section reveals a justification of the issue by presenting background information about the study, the purpose of the study, the research questions, the significance of the study, and an overview. This section also covers the important terms and concepts used in the study.

1.1 Background of the Study

The value of information and technology is gaining more attention day by day. The wealth and mass of the knowledge and information is increasing as well. The 21st century has been named the information age because of its rapid technological changes. This name is not coincidental or haphazard. People need more information to survive, and organizations need more information to sustain their future and ensure compatibility. During this transition from industrial age to information age, educational institutions have had to adopt themselves to new standards. Therefore, the universities, which make the individuals ready for future, must be a part of this change, not only owning the latest technology but also by adapting the necessary implementations.Through this exponential growth of

information and technology, different views and applications have emerged in education in recent years. Making learning any time-and-anywhere activity rather than a place-bound schoolhouse event has been rapidly evolving for several decades (Lundt, 2004). Senge (1994) emphasizes on the general structure of the old school system that removes the authenticity from education by stating "The industrial age assembly-line model for education has shaped our schools more than we can imagine–producing generations of 'knowers,' not lifelong learners, people beautifully prepared for a world that no longer exists." The invention of computers and the development of the Internet have forced education into a new paradigm of learning. As Lundt (2004) states with the emergence of the Internet, distance learning technology and online instruction represent a new and effective means of replacing the traditional school system with a highly effective and efficient means of educating people.

In the last decades, while reshaping our schools, the Internet has emerged as a formidable tool for enhancing the learning process. Thus, it has been proposed as a powerful environment to support student-centered instruction by facilitating methods that focus on constructivism, active learning, collaborative learning, and individualized learning, which are the methods that consider the learner as the most important part of instruction (Tait, 1997). Therefore, online instruction is considered a new and revolutionary learning model that uses the benefits of Internet technology to broaden and deepen the learning experience. Moreover, rather than being a place- and time-bounded activity, taking learning to a 24/7 activity from any location is a valuable advantage of online instruction as well. Including learning materials and keeping online resources fresh and relevant can also be seen as advantages (Rosenberg, 2001).

As the Internet continues to grow, online applications are being developed in great numbers, and original distance education by correspondence course has been upgraded to incorporate 21st century technology. Rosenberg (2001) states, "In the future, changes in society, business, and technology will limit the impact of traditional learning" (p. 7). There are a number of studies that indicate comparable

quality of traditional face-to-face education and online learning environments. Because face-to-face and online instructions both have advantages and disadvantages, combining these two environments also combines their benefits. The key aspects of an ideal online learning environment have been discussed for several years, and the next emerging trend, a blended learning approach is pointed for teaching and learning. Blended learning, which is frequently regarded as the future of online learning, is mainly defined as the combination of both face-to-face classroom instructions with online methods and is designed to incorporate the advantages of online learning while retaining benefits of face-to-face instruction- a merge of new and old (Osguthorpe & Graham, 2003; Riffell & Sibley, 2004). Blended learning, namely the cooperation of different strategies, is also described as hybrid instruction (Ely, 2003; Tuchman, 2002) or dual delivery (Dabbagh, 2002).

As in any design, there are many ways information technology can enhance blended learning environments and therefore support student learning experiences. The important issue is to know how to employ the information technology tools effectively, leaving students with positive perceptions and satisfied with instruction. Although supporting the traditional styles by using technological applications is important in a blended design, effective instruction can be designed by focusing on pedagogy rather than technology (Dziuban & Moscal, 2001). Kuh and Vesper (1997) comment that Seven Principles of Good Practice in Undergraduate Education developed by Chickering and Gamson (1987) are valid in designing pedagogy and appropriate for students at all types of institutions.

The Seven Principles of Good Practice in Undergraduate Education were identified by Chickering and Gamson (1987) as practices that provided some guidance on how to improve teaching and learning. Chickering and Gamson outlined the key components of a quality undergraduate education by developing these principles as a model for planning and assessing education. Although each of the seven steps of Good Practice Principles (GPP) can stand on its own, they employ powerful forces in education when combined: activity, cooperation,

diversity, expectations, interaction, and responsibility (Kuh & Vesper, 1997). The principles include:

1. Good practice encourages contact between students and faculty.
2. Good practice develops reciprocity and cooperation between students.
3. Good practice uses active learning techniques.
4. Good practice gives prompt feedback.
5. Good practice emphasizes time on task.
6. Good practice communicates high expectations.
7. Good practice respects diverse talents and ways of learning (Chickering & Gamson, 1987, p. 1).

Due to the growth of the technology, some major changes have occurred in undergraduate education. Because new communication and information technologies are becoming major resources for teaching and learning in higher education, Chickering and Ehrmann (1996) updated and elaborated the principles to include the power of these new technologies. They described the proper use of computers and communication technologies in their paper "Implementing the Seven Principles: Technology as a Lever" to advance the seven principles for instructors, students, and researchers.

GPP explain how to facilitate students in face-to-face and online learning environments by suggesting some activities that enhance the teaching and learning environment. In the literature on distance learning or face-to-face learning there is a conceptual framework for assessing or evaluating these environments with the guideline of these principles (Bagnert, 2004; Borland, Lockhart, & Howard, 2000; Graham, Cagiltay, Craner, Lim, & Duffy, 2000). GPP were also used as a guideline to set up the pedagogical process in distance education referred to in studies done by Lang (2000) and Testa (2000). Chizmar and Walbert (1999) demonstrated the direct application of the GPP to undergraduate Web-based classes. Dziuban and Moscal (2001) evaluated these principles to be an effective barometer of online instruction. Furthermore, Olson and Wisher (2002) argue that online instruction

shares the elements of good classroom teaching and facilitates the learning environment and that "good practice encourages student contact with faculty, and Web-based environments offer ways to strengthen interactions between faculty and students through email, resource sharing, and collaboration" (p. 2).

This study takes Chickering and Gamson's GPP as the guideline for setting up the pedagogical process in a blended course and directing students' perceptions of the learning environment. In this respect, the teacher education course "School Experience I (CEIT 114)" was examined from instructional perspectives. The course includes five lesson hours (one for lecture and four for observation) and is a four credit course. Some design problems arising from conventional instruction of the course were determined by the researcher through observations and then double-checked by student and instructor interviews. Prospective student teachers' learning is bounded with only a weekly one hour lecture when students meet with fellows and the instructor to share experiences and ideas at the university. Interaction and communication needs were the starting points to consider regarding the design of the course. Thus it was decided to redesign the course in blended mode by merging old and new to get the benefits of combining technological applications and more student-centered instructional methods. To set up the pedagogical process and integrate technological applications, Chickering and Gamson's (1987) Good Teaching Principles were chosen as the framework for this blended learning course.

In the design of the blended course, the emphasis was on assembling technological applications with effective face-to-face practices to create a functional and preferable blended classroom with students at the center. Reigeluth (1999) discusses how the current paradigm of instruction is changing from standardization to customization; thus, "The shift is from passive to active learning and from teacher-directed to student-directed (or jointly) learning" (p. 19). As the literature says, the shift from an instructor-centered to a learner-centered focus requires learners to be motivated and self-directed (Lee, 2000). Although the students' motivation to participate in the course was not low in previous years, it

was an issue to maintain and increase their motivation to access the course in the new blended design. While Chickering and Gamson's good teaching principles cover some motivational issues, including more detailed motivational strategies would have been helpful for this blended course. Using a theoretical basis for including motivation in design, Keller (1979) developed a motivational model Attention, Relevance, Confidence, and Satisfaction (ARCS). He (1987b) argued that using the ARCS is appropriate if someone wants to improve "the motivational appeal of instruction for a given audience" (p. 6). Thus, from the above considerations in the design and development process of the blended course and the concern for increasing and maintaining student motivation, Keller's motivational model was incorporated. Accordingly, the blended course is structured by both Chickering and Gamson's GPP and Keller's motivational design model.

Keller's comprehensive and prescriptive model of motivation draws from both intrinsic and extrinsic constructs. Attention, relevance, confidence, and satisfaction can be systematically applied to any kind of instruction to improve learner motivation. This process includes gaining and maintaining learners' attention, creating relevance for instruction, establishing confidence in the learning process, and providing satisfying consequences:

- Attention strategies are used to arouse and sustain curiosity and interest.
- Relevance strategies are used where learners see the link between what they need to know and the new information presented to them (learner's needs and interests).
- Confidence strategies are used to develop learners' expectations of success.
- Satisfaction strategies are used to provide extrinsic and intrinsic rewards.

According to Keller (1987a), ARCS is important for organizing knowledge of motivation, and a systematic procedure for designing motivationally effective instruction helps educators to design a learning environment that facilitates student motivation. Chickering and Gamson (1987) also mention motivational constructs for each of the seven good teaching practices. Taking these constructs into

consideration in the pedagogical framework of the design of the blended course, efforts were made to embed motivational issues in each of the principles. The research introduces a study in which the ARCS Motivational Design model and the Seven Principles of Good Practice in Undergraduate Education lead the way in the design and delivery process. This study was conducted to represent and ground the points discussed above and work through the process of creating a blended learning environment. In the end, students' perceptions and their motivations are presented as they appeared in the designed blended environment.

Responding to the question of how students and faculty can improve undergraduate education, Chickering and Gamson's principles have been accepted as quality instructional strategies (Chickering & Gamson, 1991). Since these principles summarize the efforts of decades of research on undergraduate students, they provide crucial guidance on how to best facilitate student success in higher education. Chickering and Gamson's principles can be seen as the "evidence of quality instruction" because they can be used for formal and informal review, for self assessment, and in course design at the same time (Batts, Colaric, & McFadden, 2006, p. 23). Additionally creating and maintaining motivation of students is a crucial issue in instructional environments. In the literature, motivation has been found to be one of the most critical concerns in how and why people learn (Keller, 1979; Wlodkowski, 1999). Lack of motivation and poor participation has been consistently linked to high dropout rates in both traditional and online courses (Berge, 2001). For the motivational constructs, Keller (1987a) points out that, educators can use ARCS as a systematic procedure for designing motivationally effective instruction to facilitate learner motivation in a learning design.

In the literature, a great deal of research studies have been conducted based on blended learning environments with such focuses as student satisfaction with blended learning environments, student attitudes toward blended learning environments, and instructor views of blended learning environments. There are also studies based on Chickering and Gamson's GPP on face-to-face and online

instructional environments in undergraduate education (Batts, 2005; Bagnert, 2004; Borland, Lockhart, & Howard, 2000; Buckley, 2003; Chizmar & Walbert, 1999; Graham, Cagiltay, Craner, Lim, & Duffy, 2000). However, little or no research has focused on the perceptions and motivation of students in a blended designed learning environment based on good practices. There is need for more research on examining learner motivation in technology-mediated learning designs. This study therefore works through the process of creating a blended learning environment from problem analysis, through design and development, to implementation and evaluation. Consequently, the research focuses on learner perceptions as well as expectations and motivation in a blended learning environment based on GPP with ARCS motivational factors.

1.2 Purpose of the Study

Because of the growth of the Internet and its uses in the field of education, the need has increased to provide quality designed blended courses with appropriate pedagogical methods, teaching tools, and an appropriate mixture of face-to-face and Web applications that work best in these environments. This study specifically looks at the students' perceptions of their learning in a blended course. The positive and negative aspects of a blended course as experienced by learners are explored. In the study, GPP was utilized in the design framework of a blended course, and student perceptions were gathered in relation to specific principles. Thus, the purpose of this study was to investigate the perceptions of learners in the blended course relative to the use of Chickering and Gamson's (1987) Seven Principles for Good Practice in Undergraduate Education. Additionally, through the motivational requirements specified by Keller's ARCS, students' motivations were gathered and analyzed. Thus the study was designed to determine student motivation in a blended environment in relation to Keller's ARCS motivational design model.

1.3 Research Questions

The study focused on four primary research questions:

1. What are learners' perceptions in the blended course?
    - 1.1. What are learners' perceptions in the blended course in relation to GPP?
2. What are learners' motivations in the blended course aligned with components of Keller's ARCS motivational design model?
3. What are learners' motivations for the course Web site aligned with components of Keller's ARCS motivational design model?
4. Is there a relationship between GPP and learner motivation aligned with components of Keller's ARCS motivational design model?

1.4. Significance of the Study

This study focused on the investigation of students' perceptions of a newly designed technologically supported course relative to the use of GPP. For these intentions, a traditional face-to-face course was redesigned with the support of online applications by taking GPP as the framework. The principles were originally developed with the goal of applying them to face-to-face instruction but it has been recognized that they may be applicable in a variety of instructional settings (Chickering & Ehrmann, 1996). Thus, this study might be significant for designers and instructors who are planning to design blended learning environments, which offers a better understanding of utilizing GPP with respect to a blended design.

The results of this study will provide information to previous research (Batts, 2005; Braxton, Olsen & Simmons, 1998; Buckley, 2003; Graham, Cagiltay, Craner, Lim & Duffy, 2000; Taylor, 2002) about the effective application of Chickering and Gamson's (1987) GPP in undergraduate education by getting student's perceptions on the issue.

In addition, there are currently numerous studies on Chickering and Gamson's (1987) GPP but almost all of them focus only on distance education courses or traditional face-to-face environments separately from each other (Batts, Colaric, & McFadden, 2006; Chizmar & Walbert, 1999; Parker & Hankins, 2002; Ritter & Lemke, 2000). Exploring the effectiveness of the combination of these two learning environments through courses designed in blended formats can help instructors use these environments in their instruction, and students can be more supported in their learning by having the full advantages of both environments. It is expected that this study may provide evidence that these principles can be as evident in blended courses as in online or face-to-face instruction.

In this study, students' perceptions, experiences, and motivational scores were gathered according to a blended designed course. It is hoped that the learners in blended learning environments might also benefit from this study since they will be able to make better judgments regarding their preferred way of instruction (blended, online or face-to-face).

Course evaluations include providing feedback from students to instructors, faculty and designers of the courses so they can continuously improve the quality of courses. Chickering and Gamson's (1987) GPP might be used to assess the quality of the instructional environments. Thus, instructors might use the results to determine the quality of their blended learning environments and the findings may help instructors decide how to assess the learning environments that are designed in blended formats. Additionally this research may help instructors who want to improve the design of their existing blended courses.

As the old saying goes, "People teach the way they were taught." And in schools of teacher education, because instructors are educating future teachers to guide new generations, the prospective teachers need to be more technologically literate. One way to avoid such stagnant results is presenting new teachers with more technological applications during their learning process. In this study the study group composed of CEIT – a technological department's – students. They

learn how to teach technology to their students and how to use technology in their teaching. In this study, a blended learning environment was designed supported by technological applications and prospective teachers' ideas were sought in relation to the utilization of principles. This blended course is one of the courses that technological applications integrated in their teaching. This study is significant because it explores students' perceptions of the blended course based on GPP and students' suggestions might be contributing to the improvement of the course, it is to be hoped that the students benefited from the results by raising self-awareness through reflection. Another expectation is that the perceptions of the students will direct future course design to be more learner-centered.

Motivation is essential to learning and performance, particularly in technology supported environments where learners must be active participants (Lee, 2000). The literature reveals, despite the importance of motivation on learning, there are little data regarding student motivation (Visser, Plomp, Amirault, & Kuiper, 2002), particularly within blended learning environments. Although many researchers discuss the motivational needs of learners (Garcia & Pintrich, 1995; Lee, 2000; Keller, 1987; Visser & Keller, 1990; Visser et al., 2002) there is little research on the topic. The findings related to student motivation in blended learning environments presented in this study can be beneficial for the designers of blended learning environments on how to respond to learners' motivational needs in their designs. Additionally the motivational scores of learners may help the designers use ARCS to develop effective and appropriate strategies to enhance and maintain learner motivation in a blended design. Knowing the relationship between motivation and perceptions of learners in the blended designs may help instructors and designers organize the learning process.

Designing an environment poses a significant challenge, requiring learning activities that address learner needs and respond to their requirements. Other challenges include selecting appropriate technological, instructional, and motivational methods that improve learning by responding student needs. This

study is significant that provides information about these challenges by providing learners' perceptions in relation to them.

1.5. Overview of the Study

This study is organized into five chapters. The introduction (Chapter 1) identifies the problem, its background, the research questions, the significance, and an overview of the study. The second chapter, a literature review, defines distance, Web-based, and blended learning environments; explains Chickering and Gamson's Seven Good Teaching Practices in undergraduate education and Keller's ARCS motivational aspects as used to set up the pedagogical framework of a blended design; and summarizes previous studies. In the methodology section, Chapter 3, the research design, context of the study, usability studies, participants, instruments, data collection procedures, data analysis, validity and reliability issues, and the limitations and delimitations of the study are clarified. This chapter also describes the design of the blended environment using GPP and ARCS and the used Web environment. The results are revealed in Chapter 4 including a detailed analysis of the data and explanation of their outcomes. In this chapter, both the qualitative and quantitative results are explained in relation to the research questions. Finally Chapter 5 included the major findings, discussion, and recommendations for further research.

1.6. Definitions of Terms and Concepts Used in the Study

In support of the research questions and literature review, the following definitions are utilized in the study:

Asynchronous learning environment: Any learning event independent of time and place. Anyone can access the program at any time and as many times as desired. Communication between learners does not take place in real time, because there is no live component. E-mail and discussion boards are common forms of communication.

Authentic learning: "Authentic tasks are those that have real world relevance and utility, that integrate those tasks across the curriculum, that provide appropriate levels of complexity, and that allows students to select appropriate levels of difficulty or involvement" (Jonassen, 1992, p. 140). Instructional activities that demonstrate real life connections by associating the concept taught with a real life activity or event (Richmond, 2003). This is a type of active learning strategy that provides learners the opportunity to be involved and interested in their own learning (Khan, 1997).

Blended instruction (Hybrid instruction): Type of instruction which is delivered using the best aspects of both online and traditional face-to-face classrooms. It combines important features of both traditional classroom instruction and online activities as appropriate, delivered over the Internet using the same tools as online courses.

Discussion board: An online forum where participants post messages for others to read.

Distance education: The delivery of the planned learning experience to students separated from the instructor and other students by time and place. Learning is facilitated by the Internet and e-mail, fax, discussion boards, and telephone conferences support student interaction.

Good practice principles (GPP): These principles provide some guidance on how to structure learning in educational environments. Chickering and Gamson's (1987) Seven Principles for Good Practice are used as the framework in the study. These seven principles include contact between students and faculty, reciprocity and cooperation between students, active learning, feedback, time on task, high expectations, and diverse talents and ways of learning. Throughout this study GPP, Seven Principles for Good Practice and good teaching principles meant same.

Ill-structured scenarios: Ill-structured scenarios are realistic, real life applications that have many alternative solutions to problems instead of one absolute correct

answer. Ill structured scenarios are “vaguely defined or unclear goals and constraints, multiple solution paths, and multiple criteria for evaluating solutions; they are more difficult to solve” (Jonassen, 2002. p.79)

Instructional design: The entire process of analysis of learner needs, development of the instructional system, design and development of instructional materials and activities, implementation of the learning design, and evaluation of the whole system.

Learner motivation: Learner motivation is the individual’s desire to learn course content as measured by the Course Interest Survey and interest in instructional materials as measured by the Instructional Materials Motivation Survey (Keller & Subhiyah, 1993),.

Learner perception: Student’s perception of the educational effectiveness of an instructional experience.

Online instruction: Instruction delivered via the Internet with minimal or no face-to-face contact using a variety of online delivery systems. Both synchronous and asynchronous modes of student-student and student-instructor interactions are generally supported.

Preservice teacher (Prospective student teacher): A person who is presently enrolled in a preservice teacher education program.

Synchronous learning environment: The learners communicate simultaneously by using chat rooms, audio teleconferencing, and video teleconferencing. This occurs when multiple individuals are online and interact with one another using real time software.

Traditional face-to-face instruction: This involves teacher-centered expositions of topics. In the course, most activities, especially discussions, take place face-to-face, and assignments are distributed via hard copy within class meetings.

Web-based instruction: The application of a repertoire of cognitively oriented instructional strategies implemented within a constructivist and collaborative learning environment, utilizing the attributes and resources of the World Wide Web (Khan, 1997).

CHAPTER 2

REVIEW OF RELATED LITERATURE

This chapter includes the theoretical perspective and relevant research studies from the literature. The recent growth in the Internet technologies offers significant educational advantages and thus influences learning experiences by affecting the general design of instructional environments. Thus this chapter will begin by reviewing distance learning and Web-based instruction in accordance with the development of Internet. Next a comparison of traditional face-to-face, all online learning environments, and blended learning environments will be presented. Because this study is based on student perceptions and motivation in a blended course designed using Chickering and Gamson's GPP and Keller's ARCS motivational model, GPP and ARCS are the other issues addressed in this chapter in the context of relevant research studies. After all, some general information will be provided about technology use in teacher education. The full review of the literature covers these areas:

- Distance education
- Web-based instruction
- Blended learning
- Chickering and Gamson's Seven Principles for Good Practice

- Motivation and Keller's ARCS motivational design model
- Importance of technology in teacher education

The selection of these headings and categories supported the research literature and plan of this study.

2.1. Distance Education

Learning takes the center of all educational problems and has been drawing people's attention since at least the days of Aristotle. For centuries people have tried to find solutions to learning and teaching problems. To this end, they have come together to learn something from each other, but as time passes the needs of people change, and this change has brought the need for equal access to resources from everywhere and at any time. Distance education is an approach that aims to give time and place independent instruction to people by using developing technologies. In recent decades, technology and especially computers have been used as a remedy for educational problems. Because of the growth of the Internet, teaching and learning from a distance has gained a new dimension and new searches speed up about Web-based instructional environments.

Distance education has multiple definitions, but among all definitions, its simplest common properties are place and time independence. For example according to Moore and Kearsley (1996), distance education is planned learning that occurs in different places independent of a physical classroom and time that has special techniques, methods, technology, and administrative arrangements. Gunawardena and McIsaac (2004) describe distance education as the planned learning of people with electronic communication tools, place and time independent from instructors and offered by an academic institution. In distance education, the learner is the key he or she must be comfortable regardless of time and place, meaning rather than the factors taking roots from the instructor or institution, the learning design must focus on convenient instruction from the learners' perspective.

The growing acceptance of distance education as it has shifted from the correspondence courses to encompassing computers and the Internet has required adaptation of some distance education theories. One of the known theories is Otto Peters's Industrialization Theory. In this theory, distance education is seen as the industrialized form of teaching and learning because of the need to instruct great number of students at the same time but in any place (Peters, 1998). He pointed out the time saved using this approach writing, "With regard to curricular work, university teachers would no longer be expected to pass on the results of their research in the form of courses but to find out exactly the learning requirements of defined groups of students and make effort to satisfy those requirements as quickly and effectively as possible" (p. 118). One other theory is Wedemeyer's and Moore's Independent Learning Theory. This theory focused on independent study as opposed to that of a group. According to Wedemayer, distance education is important because it provides self-directed learning and independence to students, both skills that are important in Humanism and Andragogy (Moore & Kearsley, 1996). The third theory is Holmberg's Guided Didactic Conversation, which emphasizes individual interaction with text and conversational style (Moore & Kearsley, 1996). This theory refers to both real and simulated conversations, although it relies heavily upon simulated conversation. He argues that because the emphasis is on the content and conversational character of the written pre-produced course package, the instructors and designers have the responsibility to create conversations within "well-written, self-instructional materials" (Holmberg, 1989, p. 43). The last relevant theory of distance education here is Equivalency Theory. In this theory it is believed that any group of students should receive the same information, and the developing distance education systems must ensure the equivalency of learning experiences (Moore & Kearsley, 1996).

Distance education is not a new concept; it has roots that date back to the 1800s with correspondence education. As time has passed, distance education has tried to adopt new technologies to reach more learners and give more effective instruction. Radio, television, video, teleconferencing systems, and the Internet

have all been utilized to advance distance education programs. According to Hill, Wiley, Nelson, and Han (2004) the Internet is the prime technology to build learner centered distance education environments because the learners, instructors, and experts all work together during the learning process. In the next section, Web-based instructional environments that use Internet technologies for distance education are highlighted.

2.2. Web-Based Instruction

The growth of the Internet had led to its extensive use to create distance-based educational experiences for students (Horton, 1999). Online applications have begun to attract particular attention in the field of education. In addition to the ease of time and place restrictions for distance education courses, the emphasis on using technological applications improves productivity, efficiency, and reliability (Suanpang, Petocz & Kalceff, 2004). Learning is seen as a continuous process, and therefore access to learning and learning opportunities should be made available to anyone, anywhere, and anytime (Rosenberg, 2001, p. xvii). At this point, Internet technology has the property to provide learning independent of time and place, and Web-based instruction allows flexibility for the teaching process to occur at any time and anywhere. The ability to provide interactive learning activities is one of the essential characteristics of the Internet, setting it apart from most other technologies. Not only does Web-based Instruction allow the learner and the instructor to communicate over any distance to any place, it also alters the concept of time. Generally, students can participate in a course at any time of day or night they prefer. This style of learning requires a great deal of responsibility, and learners must be self-directed, able to work independently, and able to manage their own time. Due to these advantages, as Taylor (2002) pointed in his study, millions of students have engaged in Web-based learning environments and their numbers continue to grow.

Web-based instruction can be viewed as an innovative approach for delivering instruction to a remote audience where learning is fostered and

supported using the Web as the medium (Khan, 1997). A broad terminology has been used for Web-based instructional environments; this fact makes it difficult to develop a generic definition. Terms that are commonly used include "computer-based learning," "distance learning," "e-learning," "Internet-based learning," "online learning," "resource-based learning," "technology-based learning," and "Web-based learning" (Anohino, 2005) and in addition to "distributed learning," "tele-learning." In her study, Anohine (2005) presented eight groups of the most widespread terms used in the field of virtual learning with similar meanings, and Figure 2.1 shows the relationships among these groups. For example, while Picciano (2001) uses distance education, distributed learning, or open learning; Kearsley (2000) uses online learning and Horton (1999) uses Web-based instruction or Web-based education. All of these terms imply that the learner is at a distance from the tutor or instructor, that the learner uses some form of technology (usually a computer with an Internet connection) to access the learning materials, that the learner uses technology to interact with the tutor or instructor and other learners, and that some form of support is provided to learners (Ally, 2004). According to Khan's (1997) definition of Web-based instruction as "a hypermedia-based instructional program which utilizes the attributes and resources of the World Wide Web to create a meaningful learning environment where learning is fostered and supported," (p. 6) it is clear that the environment takes advantage of the Internet for delivering instruction. Relan and Gillani (1997) define it as "the application of repertoire of cognitively oriented instructional strategies within a constructivist and collaborative learning environment, utilizing the attributes and resources of the Web." All these definitions remain clear and consistent on the point that Web-based instruction takes advantage of the Internet to deliver instruction.

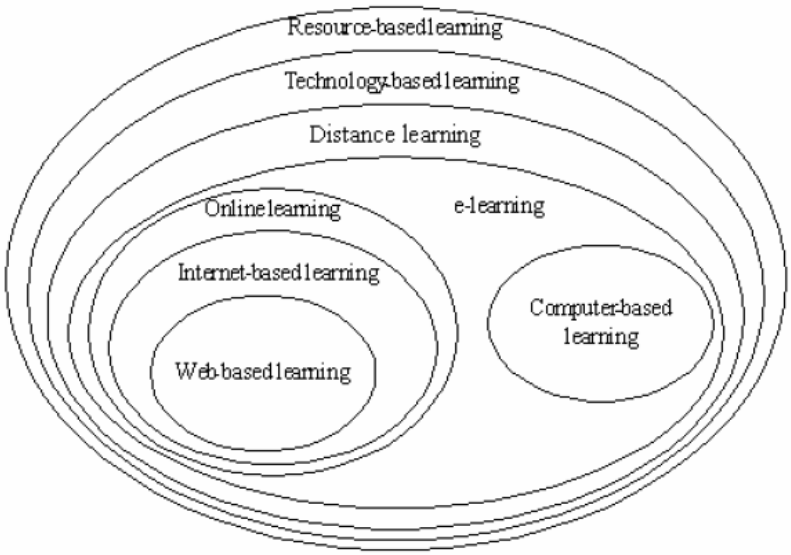

Figure 2.1 The Subset of Relationships Between the Groups of Terms in Virtual Learning Environments (Adapted from Anohine, 2005)

As the Internet has introduced society to a powerful and flexible way to communicate, share, and exchange resources, knowledge, and information online, the benefits of Web-based instruction must also be discussed. McCormack and Jones (1998) summarized the benefits of a Web-based classroom: (a) computer mediation–simple, familiar, and useful interface; (b) geographic, temporal, and platform independence; and (c) increased learner control and communication.

A large body of research exists in the literature on Web-based learning that seems to conclude no significant difference in learning effectiveness between online and traditional environments; some studies revealed that students enrolled in Web-based courses have similar test scores to those in traditional face-to-face classrooms (Lynch, 2002; Moore & Thompson, 1997; Parker & Gemino, 2001; Schutte, 1997). However, some studies revealed that online instruction has led to significantly better results on examinations in solving complicated problems and in perceived learning outcomes (Hiltz, 1994; Daugherty & Funke, 1998; Heckman & Annabi, 2005). Hiltz, Zhang, and Turoff (2002) gathered survey results across 19

studies and concluded that online learning environments are "as effective as or more effective than traditional modes of course delivery at the university level" (p. 15). Navarro and Shoemaker (2000) found that online learners learn as well as or better than traditional learners, regardless of gender, ethnicity, and academic background, or computer skills. In their research, Heckman and Annabi (2005) studied four face-to-face and four asynchronous online learning environments to determine the similarities and differences between the learning processes. The findings provided evidence that online processes generate high levels of cognitive activity at least equal to, and in some cases superior to, the cognitive processes in the face-to-face classroom. It was also determined that interaction among students prompted a greater proportion of high-level cognitive indicators than interaction between the students and instructors.

Despite an increase in Web-based learning applications in recent years and studies demonstrating positive results of academic scores in these learning environments, the ability to provide a viable alternative learning environment is still being questioned. Both Web-based and traditional face-to-face learning environments have unique advantages and challenges. For example, the electronic nature of Web-based instructional courses can leave the learners feeling isolated and cut off from instructors and other students. However because of the inherent flexibility of a Web-based class, it is easier for a learner to participate when he can create his own schedule. One advantage of a face-to-face class is that the learner can get immediate help from the instructor because they are both in the same place. The advantages and disadvantages of both learning environments raised the idea of harmonizing the two, leading to the idea of blended learning designs. In the next section, blended learning is described, identifying positive and negative aspects of both Web-based and face-to-face instruction.

2.3. Blended Learning

Effective online learning environments require more than just virtual connections between people in different places. These environments, just like face-

to-face situations, present different types of interactions while conducting complex cognitive tasks. Thus the coordination between these two communication channels is crucial (Kraut, Gallagher, Fish, & Chalfonte, 1992). The main critics of fully online learning designs suggest that some students will always feel disconnected in this type of environment without face-to-face contact (Bullen, 1998). In recent years, such criticism has led to designing blended courses that avoid the pitfalls associated with wholly online or wholly face-to-face courses.

The idea of blending different learning experiences has been in existence since humans started thinking about teaching (Williams, 2003), but due to the advances of Internet-based technologies and their usage in learning environments, the idea continues to gain popularity. Besides bringing its own benefits, it is the aim of organizations that online instruction does not remove all of the advantages of face-to-face instruction. As indicated by Bleed (2001), blended learning can be a valuable way to redesign courses to combine physical as well as virtual instruction in a way that merges "bricks and clicks" (p. 18). He adds that designing the courses in blended mode will help "to improve learning and to provide the socialization that supports the making of meaning for students in our new era" (p. 18). Vygotsky (1978) highlights the critical importance that social interactions play in influencing how learners focus their attentions when learning. Thus, enabling face-to-face interactions through online activities in a course might improve an important human issue, socialization, and learning will be more likely to occur.

Blended learning, also called "hybrid" instruction (Bleed, 2001; Marques, Woodbury, Hsu, & Charitos, 1998), is defined as the effective integration of face-to-face and Internet technologies and is considered both a simple and a complex process (Garrison & Kanuka, 2004). They explain:

> At its simplest, blended learning is the thoughtful integration of classroom face-to-face learning experiences with online learning experiences. There is considerable intuitive appeal to the concept of integrating the strengths of synchronous (face-to-face) and asynchronous (text-based Internet) learning activities. At the same time, there is considerable complexity

> in its implementation with the challenge of virtually limitless design possibilities and applicability to so many contexts. (p. 96).

In their definion Garrison and Kanuka stress that there is no one strict way to blend the learning environments; instead, they address different possibilities. Osguthorpe and Graham (2003) agree with this idea, and they list the most common types of blends as (a) blending online and face-to-face learning activities, (b) blending online and face-to-face students, and (c) blending online and face-to-face instructors. Palloff and Pratt (2007) also agree with the idea that the design of blended environments allows for different kinds of combinations, and they point out "Some instructors use online parts as the 'static' components for accessing learners the course documents or use online flexibility as to extend the class discussion times or use online components as to have collaborative environments" (p. 125). Understanding the types of blends is one of the best ways to accomplish and develop blended learning. Additionally when designing blended-learning environments, Horton (1999) recommends methodologies for combining face-to-face and online components of a course:

1. Online components that prepare learners for face-to-face sessions.
2. Online materials as a mode of presentation, where an instructor uses Web-based materials for classroom presentations.
3. Online lessons that are completed by individuals in the classroom and are facilitated by the instructor while in the class.
4. Classroom sessions as an orientation or as a time for questions.

In this blended design, students meet together in a traditional face-to-face mode and to maintain the connectivity while they are apart in the online mode.

These definitions reveal that blended courses have the potential to capture the benefits of Web-based instruction while retaining advantages of traditional classroom instruction (Riffell & Sibley, 2004). However, blended learning environments do not occur merely by adding face-to-face instruction to online

material. According to Osguthorpe and Graham (2003), a truly blended solution "involves the strengths of each type of learning environment and none of the weaknesses" (p. 228) that lead to the development of an effective instructional environment. In Clark's (2001) comparison, he addresses the importance of having a combination of the most beneficial parts in the design. He considers blended learning a cocktail:

> Good cocktails are not normally made by including as many different drinks as you can muster. They are carefully crafted blends of complementary tastes, where the sum is greater than the parts. In some cases as whisky, single malt is superior to the blend! (p. 41).

In an example of a blended course, Tuckman (2002) aimed to combine the most important features of traditional classroom instruction with those of computer-mediated instruction in his ADAPT Model. He believes that the hybridity of the instruction seemed to provide students both structure and opportunity for involvement in the learning process. In his model, he tried to decrease the weak points of both traditional face-to-face and online instruction by combining "important features of traditional classroom instruction (i.e., required attendance, a printed textbook, presence of an instructor) and those unique to computer-based instruction (i.e., class time spent doing computer-mediated activities rather than listening to lectures, a large number of performance activities rather than just two or three exams, self-pacing with milestones rather than a lockstep pattern)" (p. 262). In another study done by Marques et. al. (1998), they integrated conventional classroom teaching with online environments and observe that combinations leads to more "learner-centered education" (p. 1).

2.3.1. Why Blended Learning Designs

In reviewing the literature on the quality of Web-based and traditional face-to-face instruction, a number of studies indicate the comparable quality of distance learning to classroom education (Daugherty & Funke, 1998; Heckman & Annabi, 2005; Hiltz, 1994; Lynch, 2002; Moore & Thompson, 1997; Navarro &

Shoemaker, 2000; Parker & Gemino, 2001; Schutte, 1997). In a study done by Beare (1989) most students did not prefer distance learning and had feelings of jealously towards traditional face-to-face students. Similar results were found in Thompson and Ku's (2005) study, in which they explored seven Chinese students' experiences of and attitudes to taking online courses. Results revealed none of the participants enjoyed a class that was completely online. Thus, researchers suggested a combination of online learning and face-to-face learning would be a better choice. Also Czerniewicz (2001) points out that online courses give the participants fast and easy access to the other people in the same network, but this accessibility does not necessarily mean useful interaction will take place. She argues that instead of a purely online course, face-to-face support would prevent the sense of isolation and minimize the problems of networked learning. Similarly, Rovai and Jordon (2004) draw a comparison between fully online and blended courses, addressing that the sense of community in blended courses can be stronger because of a reduced sense of isolation created by even occasional face-to-face contact.

These results support Horton's (1999) claim that both Web-based training and traditional face-to-face training have strengths and weaknesses; thus, blending these approaches provides a more powerful learning opportunity for the individuals. For example, in a blended course, while face-to-face sessions allow for development of personal relationships and discussions, the online component enables continuity of these discussions. Blackboard Inc. introduced a white paper in 1998 to explain the educational advantages of supplementing a traditional face-to-face classroom with online delivery options (Blackboard, 1998, cited in Rodchua, 2003):

1. Enhancing student-to-student and faculty-to-student communication.
2. Enabling student-centered teaching approaches.
3. Providing 24/7 accessibility to course materials.
4. Providing in time methods to assess and evaluate student progress.
5. Reducing amount of faculty time spend on "administrivia."

It is suggested that blending instruction holds significant benefits for students and instructors, regardless of their level of technological expertise (Van de Ven, 2002) and also may improve the efficiency of classroom management, especially for large classes (Papo, 2001). Palloff and Pratt (2007) made a comparison of time demands for online and face-to-face learning environments for over one week, operating under the assumption that a blended course would require roughly the total time spent in these two environments combined (see Table 2.1). Although teaching blended courses may increase time demands, many faculties enjoy this approach because it allows for significant flexibility and benefits in instruction.

Table 2.1 Time Comparison of Online versus Face-to-Face Class for One Week (Palloff & Pratt, 2007, p. 74).

The comparison of online versus face-to-face class for one week		
Instructor activity	*Face-to-face class*	*Online class*
Preparation	2 hours per week to: Review assigned reading Review lecture materials Review and preparation of in-class activities	2 hours per week to: Review assigned reading Prepare discussion questions and "lecture" material in the form of paragraph or two
Class time	2 ½ hours per week of assigned class time	2 hours daily to: Read student posts
Follow up	2 to 3 hours per week for: Individual contact with students Reading student assignments	Respond to student posts 2 to 3 hours per week for: Individual contact with students via e-mail and phone Reading student assignments
Totals for the week	6 ½ to 7 hours per week	18 to 19 hours per week

One advantage of blended learning designs is the benefit from the Web's synchronicity and asynchronicity for interaction between learners, as well as the communication between the instructors and learners. Dillenbourg (2000) comments

that integrating synchronous and asynchronous communication in a pedagogically significant way can make learning environments more robust. It also has advantages for students who are not particularly active during face-to-face encounters but prefer discussions in Web-based settings. Asynchronous communication does not require the learners and instructors to be present simultaneously at a specific time or place for the activities. Thus, learners can take advantage of 24x7 availability of Web materials to work through them at their own pace at times that suit their individual preferences and schedules. Another determined benefit of asynchronous online discussions is having documentation of the content (Berge, 1999; Sloffer, Dueber & Duffy, 1999), providing learners with a searchable archive after discussions. Asynchronous interaction provides opportunities for active input from all members of the online classroom and supports learner-centered learning environments (Miltiadou & Savenye, 2003). Some additional advantages noted by Branon and Essex (2001) and Berge (1999) are that distance educators have found asynchronous communication useful for encouraging more in-depth, thoughtful discussions; for communicating with temporally diverse students; and for giving all students the opportunity to respond to a topic at their own pace.

To conclude, because of the determined benefits of blended learning environments, interest in this type of learning is beginning to grow in universities, organizations, and institutions. All the literature suggests that it is advantageous blending face-to-face instruction with online learning by incorporating the best aspects of both environments. At this point, there is a need to provide well designed blended courses with appropriate pedagogical methods, teaching tools, and an appropriate blend of face-to-face and Web applications. Evaluations can provide feedback from learners to the instructors, faculty, and designers of the courses so they can continuously improve the quality of these courses. In this study, a blended learning environment was designed by taking GPP and ARCS as the framework, and student's perceptions and motivation were later gathered

regarding the issue. Thus, in the next section the theoretical fundamentals and related literature of the Seven Principles for Good Practice is explored.

2.4. Chickering and Gamson's Seven Principles for Good Practice

The growth of technology mediated learning in higher education encouraged organizations to develop principles, guidelines, and benchmarks to ensure quality Web-based instruction. In 1987 Chickering and Gamson developed a conceptual model for planning and assessing education. They assembled findings from research on the undergraduate experience and published Seven Principles for Good Practices in Undergraduate Education. Although these principles were created for traditional learning environments, due to the growth of technology and developments in the field of education, the original principles were modified by Chickering and Ehrmann in 2001. In their article, they describe the appropriate ways to enhance the principles with computers and other technologies. Furthermore, they included some examples to help instructors and designers use GPP as the framework for their instruction

Since Chickering and Ehrmann's update, several institutions and researchers have used GPP in the design, teaching, and delivery of Web-based courses (Woolsey & Rochua, 2004). Several studies refer to Chickering and Gamson's principles as the guideline used to set up the pedagogical process in distance courses or offered as a framework for institutional improvement based on years of evidence regarding educational effectiveness (Lang, 2000; Testa, 2000). Shea, Frederickson, Pickett, and Pelz (2003) stressed that Chickering and Gamson's (1987) principles are important to consider when planning a well-designed learning environment for higher education students. These principles summarize decades of research on undergraduate students and thus provide valuable guidance on how to best facilitate student success in higher education. Kuh (1997) noted that the list of GPP "is one of the most widely disseminated documents in American Higher Education" (p. 72). The principles have also been the basis for a large number of research studies (Alvarez, 2005; Batts, 2005;

Braxton, Olsen & Simmons, 1998; Buckley, 2003; Graham, Cagiltay, Craner, Lim & Duffy 2000; Mukawa, 2006; Stoudt, 2006; Taylor, 2002). There are seven key principles:

1. Good practice encourages contact between students and faculty.

   Frequent student-faculty contact in and out of class is a most important factor in student motivation and involvement. Faculty concern helps students get through rough times and keep on working. Knowing a few faculty members well enhances students' intellectual commitment and encourages them to think about their own values and plans. (Chickering & Gamson, 1987)

2. Good practice develops reciprocity and cooperation between students.

   Learning is enhanced when it is more like a team effort than a solo race. Good learning, like good work, is collaborative and social, not competitive and isolated. Working with others often increases involvement in learning. Sharing one's ideas and responding to others' improves thinking and deepens understanding. (Chickering & Gamson, 1987)

3. Good practice uses active learning techniques.

   Learning is not a spectator sport. Students do not learn much just sitting in classes listening to teachers, memorizing prepackaged assignments, and spitting out answers. They must talk about what they are learning, write reflectively about it, relate it to past experiences, and apply it to their daily lives. They must make what they learn part of themselves. (Chickering & Gamson, 1987)

4. Good practice gives prompt feedback.

   Knowing what you know and don't know focuses your learning. In getting started, students need help in assessing their existing knowledge and

competence. Then, in classes, students need frequent opportunities to perform and receive feedback on their performance. At various points during college, and at its end, students need chances to reflect on what they have learned, what they still need to know, and how they might assess themselves. (Chickering & Gamson, 1987)

5. Good practice emphasizes time on task.

   Time plus energy equals learning. Learning to use one's time well is critical for students and professionals alike. Allocating realistic amounts of time means effective learning for students and effective teaching for faculty. (Chickering & Gamson, 1987)

6. Good practice communicates high expectations.

   Expect more and you will get it. High expectations are important for everyone—for the poorly prepared, for those unwilling to exert themselves, and for the bright and well motivated. Expecting students to perform well becomes a self-fulfilling prophecy. (Chickering & Gamson, 1987)

7. Good practice respects diverse talents and ways of learning.

   Many roads lead to learning. Different students bring different talents and styles to college. Brilliant students in a seminar might be all thumbs in a lab or studio; students rich in hands-on experience may not do so well with theory. Students need opportunities to show their talents and learn in ways that work for them. Then they can be pushed to learn in new ways that do not come so easily. (Chickering & Gamson, 1987)

These principles have set standards for undergraduate instruction and have been used to enhance the quality of teaching in traditional face-to-face classrooms; however, with the increase in offerings of online education, they have been revisited in the context of technology in general and online courses. Thus the

literature supports the studies done on GPP in traditional face-to-face or fully-online learning environments (Alvarez, 2005; Batts, 2005; Chickering & Ehrmann, 1996; Chizmar & Walbert, 1999; Graham et al., 2000; Parker & Hankins, 2002; Ritter & Lemke, 2000; Taylor, 2002). With the increase of online instruction, the studies that examine GPP in online instruction both in undergraduate or graduate courses should therefore also increase. Although there has been a recent increase in blended instruction in higher education, there is little research on the practical implementation of the GPP for blended courses. One of the studies that incorporated a blended course with GPP was conducted by Martyn (2003) at a small college in Ohio that employed GPP with the best features of online and face-to-face instruction. The next part of this study includes basic research studies on GPP in face-to-face and online learning environments to establish an understanding of the previous studies focused on the issue.

2.4.1. Research on the GPP

The basic literature on Chickering and Gamson's Seven Principles of Good Practice starts in 1987 with the initial publication of the principles and develops further after Chickering and Ehrmann's update in 1996 to include technological applications. Since 1996, it has continued through studies done by Braxton, Olsen and Simmons (1998); Chizmar and Walbert (1999); Graham, et al., 2000; Ritter and Lemke (2000); Testa (2000); Dziuban and Moscal (2001); Parker and Hankins (2002); Taylor (2002); Buckley (2003); Alvarez (2005); Batts (2005); Mukawa (2006); Batts, Colaric, and McFadden (2006). These studies focus on research done in traditional face-to-face learning environments or in online instruction. This study is important because it focuses specifically on GPP in a blended learning environment.

Braxton, Olsen, and Simmons (1998) conducted research with 167 instructors who taught at least one undergraduate course over a two year period. The study focuses on the influence of pragmatic development of faculty discipline when using Chickering and Gamson's (1987) GPP. The researchers hypothesized

the disciplines with high pragmatic development would be less likely to follow the guidelines of the GPP because there is a greater agreement on course content and degree requirements. Data were collected via a questionnaire and interviews. Study results revealed the principles of high expectations (3.97), time on task (3.63), and respect for diversity (3.2) ranked highest in all disciplines, while student feedback (2.76) ranked lowest.

A successful incorporation of GPP with online applications can be seen in Chizmar and Walbert's (1999) study. They incorporated GPP in an undergraduate statistics course, demonstrating a positive incorporation of the GPP in a Web-based class. They cited specific examples of how instructors can use technology to support each of the principles successfully including (a) encouraging student use of the communication technologies for sharing ideas, critiques, and review of assignments as well as to work on group projects with other students and the instructors; (b) providing prompt feedback to student questions and assignments and giving online quizzes to provide immediate feedback on performance; and (c) choosing diverse learning tools based on students' preferred way of interacting with the material (individually or as a part of a group).

Ritter and Lemke (2000) used the principles to evaluate undergraduate courses. They evaluated the use of the Internet to enhance learning and to promote good practices in undergraduate education according to the GPP. During a two year process, Ritter and Lemke (2000) surveyed 236 students about their impressions on how technology was useful in addressing good practices in a geography classroom. Results revealed students believed e-mail usage aided student–faculty contact, active learning was encouraged, prompt feedback was facilitated, and the Internet enhanced learning. Students also perceived that the use of technology supported Chickering and Gamson's (1987) principles and that their performance increased as a result.

Another in-depth application of the GPP in a Web-based format was conducted by Graham et al. (2000). The authors, from Indiana University's Center

for Research on Learning and Technology (CRLT), examined four online courses at a professional school at a large Midwestern university to provide feedback on strengths and weaknesses. The authors provided an overview of the Chickering and Gamson (1987) principles, the technologies employed to support each principle, and specific recommendations based on faculty and student anecdotal comments and researcher observations. The researchers used asynchronous discussion board chats and course documents as the data source. Additionally they interviewed three of the four instructors, but they did not make contact with any of the students. Results showed the principles of active learning, student-faculty contact, and respect diverse talents and ways of learning were strong, although cooperation and feedback needed improvement. The authors note "Our research was limited in scope and was more qualitative than quantitative; the evaluation should not be considered a rigorous research project" and the strategies and suggestions mentioned were specific to the Web-based classes evaluated (Graham et al., 2000, p. 2).

Another study that used GPP as the framework in the design process was done by Parker and Hankins (2002). During the development and improvement of an online Computer Literacy course, GPP and strategies were implemented. Students' opinions and instructor experiences were also gathered in this process. Later they discuss the best practices learned and how they were used to develop course materials and procedures for the class and summarized their recommendations.

One study designed to get students' opinions was Buckley's (2003) investigation into student perceptions and their correlation with the GPP by graduate students in an online environment. Relationships between instruction, instructional design, interaction, and students' learning experiences were also examined in the study. Data was collected from 67 graduate students enrolled in three graduate level classes by a questionnaire. This study researched graduate education even though the principles were designed for undergraduate education. Graduate students still responded well to the principles, and GPP established a

solid framework for the instructor to follow. Buckley also stated that "the implication of this finding was that it is not only important to create an interactive environment for learning, but it is also important to design discussion activities that can trigger rich and meaningful online discussion" (p. iii).

Taylor (2002) utilized a quantitative study to assess how online instructors used Chickering and Gamson's principles in teaching online undergraduate courses. The researcher developed a survey to explore whether the instructors were incorporating the practices into their online classes. The population consisted of 500 instructors who taught fully online courses to undergraduates. According to Batts, Colaric, and McFadden (2006), Taylor's study was the first of its kind applying GPP to online instruction in a quantitative format. Results revealed that although not all the principles were used in every instance, online instructors were clearly using the GPP in their online courses. The usage of the principles from highest to lowest were contact between faculty and student, feedback, ways of learning, expectations, learning techniques, and relations among students with time on task rated the lowest of all.

In December 2004, Batts, Colaric, and McFadden (2006) designed a quantitative study to examine instructor and student perception of the use of GPP for face-to-face instruction in online courses. The participants were undergraduate students in online courses and the instructors teaching those courses. A modified version of Taylor's (2002) survey was used in the study to gather data. Results revealed students and instructors perceived the use of Chickering and Gamson's (1987) GPP in selected online undergraduate education courses and agreed on the perception of their use in the selected online undergraduate courses. Students' and instructors' responses were medium to high regarding the principles of student-faculty contact, cooperation among students, active learning, prompt feedback, high expectations, and diverse talents and ways of learning. Similar to Taylor's (2002) findings, the lowest response principle was time on task.

In this study, a blended undergraduate course was designed by taking GPP as the framework, and students' perceptions about the principles were gathered. Pascarella (2001) says, "An excellent undergraduate education is most likely to occur at those colleges and universities that maximize good practices and enhance students' academic and social engagement" (p. 22). Thus, in the study the blended learning environment was developed by taking the principles as a foundation, and this section has provided a summary of the literature focused on GPP.

2.5. Motivation

Motivation has been found to be one of the most critical concerns in how and why people learn (Wlodkowski, 1999; Keller, 1979). Whether the learning environment is face-to-face or from a distance, motivation seems to be one of the key points for learners to develop their understanding of content. As the trend to design more student-directed learning environments grow, motivation needs to increase, too because the learner becomes solely responsible for his own learning process. Lee (2000) explains that the shift in education from instructor-centered to learner-centered requires learners to be motivated and self directed.

The development of technological applications and their increased use in the field of education has excited researchers as a potential motivational factor for learners. Newby, Stepich, Lehman, and Russell (2006) explain that, technological application usage can be both a motivator and an inhibitor depending on the context, and they proposed that instructors should use technology for the efficiency, enhancement, and effectiveness of lessons.

Lack of motivation and poor participation has been consistently linked to high dropout rates in both traditional and online courses (Berge, 2001), but volumes of literature confirm that when compared to traditional face-to-face instruction, online learning environments have low student completion rates and greater numbers of dropouts (Reinhart, 1999; Shellnut, Knowlton, & Savage, 1999; Visser, Plomp & Kuiper, 1999; Zvacek, 1991; Wolcott & Burnham, 1991). This

challenge is the main reason why motivational factors are giving more important in online and online supported courses. The reasons for more motivational problems in distance-related courses is because the learners do not share a physical space with the instructor; thus, detecting and correcting motivational problems is difficult because they can be "unnoticed and undetected for extended periods" (Visser, Plomp, Amirault & Kuiper, 2002, p. 95). To overcome such problems in distance learning environments, instructors and instructional designers recognize the important of applying motivational issues to the design process. Addressing these factors has decreased dropout rates in learning environments that are designed in blended mode (Rowley, Bunker, & Cole, 2002) and that support learners with motivational messages (Visser, 1990; Visser & Keller, 1990; Visser, Plomp, Amirault & Kuiper, 2002) to improve performance and retention.

Literature showed one of the most critical issues of online courses is how to develop and maintain the motivation of students. Because a blended course is a combination of both online and face-to-face modes, motivation has a crucial importance for student success and needs to be addressed properly during the design process. While designing blended courses, developers need to investigate basic issues such as course objectives, learner needs, pedagogical process, and technology. Thus, designers need to consider instructional design models, procedures, techniques, or guidelines to ensure high quality courses. In this study, Keller's ARCS Motivational Design Model is taken into consideration for the design and development process of the motivational issues in the blended course; next section will provide more information about ARCS.

2.5.1 Keller's ARCS Motivational Model

According to Keller (1983), motivation "refers to the magnitude and direction of behaviour... it refers to the choices people make as to what experiences or goals they will approach or avoid, and to the degree of effort they will exert in that respect" (p. 369). For systematic motivational design, he adds three underlying assumptions: (a) people's motivations can be influenced by external events; (b)

motivation, in relation to performance, is a means and not an end; and (c) systematic design and implementation can predictably and measurably influence motivation (Keller, 1999c). Motivation, based on Keller's definition, is measured by the amount of effort the student makes in order to attain the instructional goal.

Among all the resources that provide guidance on effective design of learning environments, John Keller's ARCS specifically addresses the motivational issues within the instructional context. Keller (1999b) summarizes the motivational elements of instructions in his model using four components: engaging and maintaining learner interests; relating course content to student interests; enhancing student confidence in understanding course content and satisfying students' inquisitiveness related to information, thus encouraging students' active involvement in learning. Based on these issues, his motivational model is comprised of attention (A), relevance (R), confidence (C), and satisfaction (S) or ARCS, which is seen as a way to develop an intrinsically interesting course that can motivate students. It can be used to develop courses that capture students' attention, enhance content relevance using prior knowledge and experiences, build confidence, and increase their satisfaction with instruction and materials (Keller, 1987b). Keller also proposes that ARCS may provide a useful framework for the design process or improvement of the motivational quality of classroom instruction and Web resources. The four strategies in ARCS present tasks in an engaging and meaningful way (Keller, 1983; Keller, 1987a; Keller, 1987b; Keller 1999b):

Attention strategies arouse and sustain curiosity and interest at the beginning and throughout the instruction.

Relevance strategies link to the learner's needs and interests providing connections between the content and methods of instruction and the learner's personal sense of importance and meaningfulness.

Confidence strategies develop an expectation of success (self-efficacy). Confidence builds on the learners' perceptions of capability for and certainty about learning or accomplishing a given task.

Satisfaction strategies provide extrinsic and intrinsic rewards for effort, introducing a direct link between the successful achievement of a task and learner effort and ability.

ARCS was developed by synthesizing various concepts and theories of human motivation into simple categories. Keller (1987b) explains that by applying ARCS to instruction, educators facilitate student motivation, and Reigeluth (1987) indicates that ARCS is useful because of its many types of motivational strategies. Fulford and Zhang (1993) have indicated that "...the ARCS model of motivational categories can provide a framework for designing learning strategies" (p.17). In one of his articles, Keller (1987b) claims "The ARCS model includes a systematic design process that can be used with typical instructional design and development models" (p. 6). Therefore, he specifies that ARCS can be a solution in the design, development, and implementation processes of an instructional environment. Some researchers, such as Warren (2000), noted that ARCS is not a complete solution for the design of instructional environments and that combining it with other models and principles would be better. In their study, Okey and Santiago (1991) demonstrate how ARCS can be used with both Dick and Carey's model and with Gagne's Nine Events of Instruction. After taking this information into account, Keller's (1987b) ARCS model was used in this study alongside Chickering and Gamson's (1987) GPP to set up the pedagogical and technological framework of the blended course.

To accompany Keller's ARCS motivational model, he has written details on how to apply the model while designing instructional environments (Keller, 1983; Keller & Kopp, 1987). The procedures include obtaining course and audience information, analyzing audience and existing materials, listing objectives and assessments, listing potential tactics, selecting and designing tactics to integrate

with instruction, selecting and developing materials, and evaluating and revising (Keller, 1999b; see Figure 2.2). He has also developed specific measures to evaluate the motivational levels of learners in different environments and subjects. The Instructional Material Motivation Survey (IMMS) and Course Interest survey (CIS) are the questionnaires that have been designed to measure students' motivational reactions to instructional materials and the environments used ARCS as a development base.

Keller's motivational design model is easy to apply to increasing the motivational appeal of instruction. After trends shifted to Web-based learning environments, Keller (1999b) modified ARCS by considering the nature of motivation in online classrooms. Content in an online setting must be presented in ways that help or motivate students to attend to the information. Stemming from Keller's studies, Cornell and Martin (1997) have written a paper that presents concrete advice on implementing ARCS principles in Web-based instructional environments. The model has been used to develop effective and appropriate strategies to enhance and maintain learner motivation in face-to-face, online, or technology-supported designs. In this study, together with Chickering and Gamson's (1987) GPP, ARCS is used to meet the motivational requirements of learners and provided part of the theoretical framework. Some studies on ARCS will be reviewed in the next section.

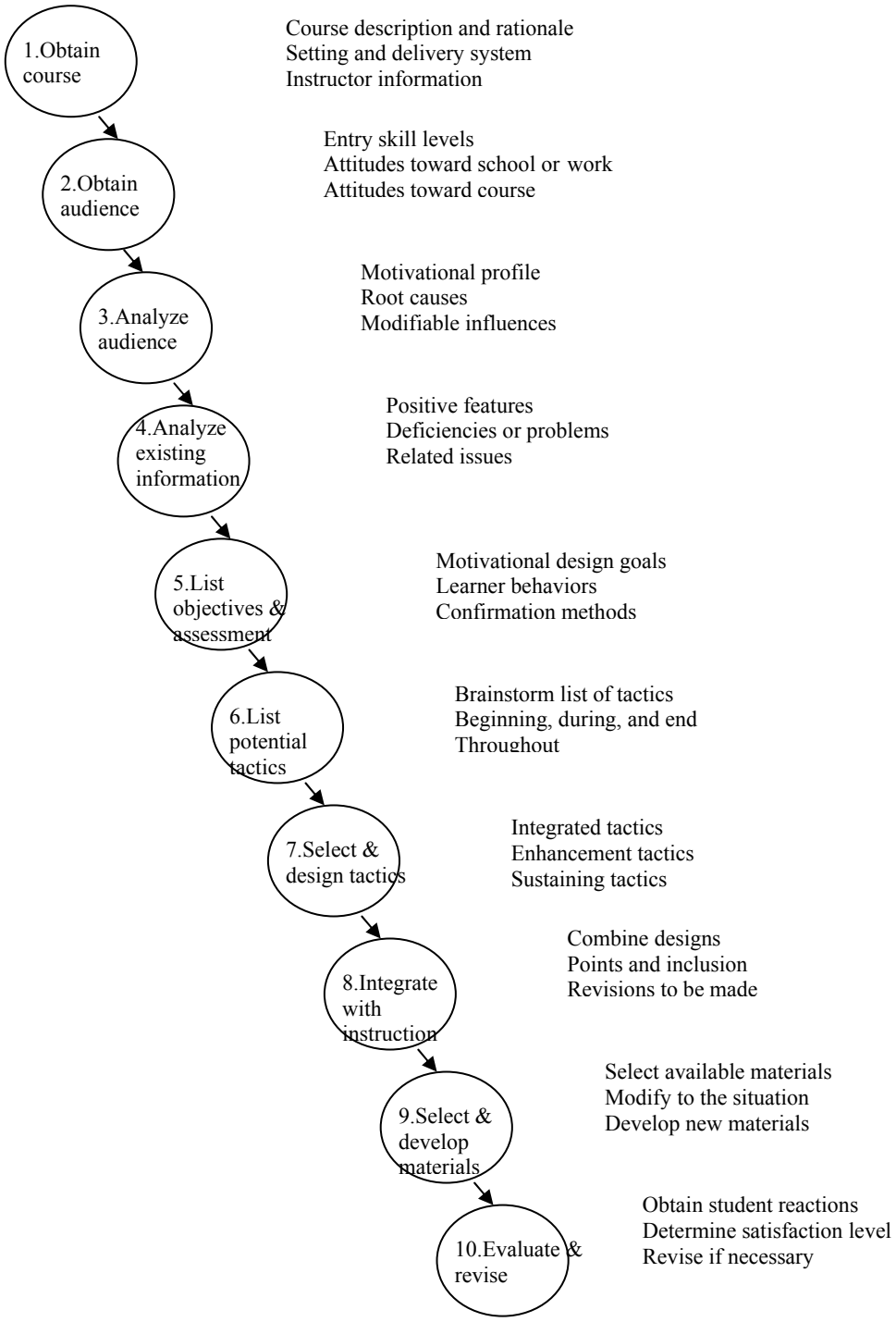

Figure 2.2 Steps in Motivational Design (Adapted from Keller, 1999a)

2.5.2 Research on ARCS

In the literature, there are studies that have used ARCS for the design and development of various courses. In one study, Song (1998) used Keller's ARCS motivational design model to develop computer-based instruction for middle school students. The study involved one control and two experimental groups; all groups received different levels of motivation during instruction. The study revealed that the group that received motivationally adaptive instructions had significantly higher levels of attention, relevance, motivation, and effectiveness than those students in the control group. Feng and Tuan (2005) also used the ARCS model in designing a lesson for one class of 11^{th} graders with low interest and motivation in learning chemistry. The results indicated that both students' motivation and achievement during the acids and bases unit increased significantly after the ARCS-based instruction.

Various studies have used messages to motivate students in distance courses to improve performance and retention. Visser (1990), and Visser and Keller (1990) studied the efficacy of motivational messages on adult learners. Visser and Keller (1990) studied the validity of the clinical use of motivational messages designed with ARCS in Mozambique. Positive results were acquired from both of the studies, indicating that motivational messages can enhance learning by motivating students to undertake self-directed learning tasks outside the classroom. An examination was also done with international distance learners about the use of motivational messages (Visser et al., 2002). The positive results in this study revealed yet more insight about how the messages helped motivate learners.

In one recent study, Kim and Keller (2008) conducted similar research in order to examine the effects of messages on motivation. Researchers constructed motivational and volitional email messages based on an integrated model of four theories and methods, including ARCS. These messages were distributed to two groups of students; one group received personal messages and the other, non-

personal messages. Results revealed that the personal message group showed a significantly higher level of motivation than the non-personal message group, especially in regard to confidence.

ARCS has been studied in many different environments, including traditional classroom-based instruction, distance learning environments, computer aided instruction, and with multimedia applications (Song, 1998; Suzuki & Keller, 1996; Visser, 1990; Visser & Keller, 1990; Vafa, 1999; Visser et al., 2002). Few studies have been conducted about motivation in blended learning environments, and Gabriella (2003) mentions that her study is the first known research to examine ARCS in connection with blended learning. In her study, she investigated the motivation, performance, and self-directed learning of undergraduate students. Study results showed significantly higher levels of performance among students who accessed technology-mediated instructional strategies designed using Keller's ARCS model of motivation. Findings suggest that systematically designed technology-mediated instructional strategies can positively affect learner motivation, performance, and self-directed learning.

In recent years, motivation studies have been undertaken in Turkey that focuses on the ARCS Motivational Design Model. In her study, Çetin (2007) examines student achievement and permanence of learning using a computer assisted education software based on ARCS. In another study, Üçgül (2006) investigates the impact of computer games on students' motivation and measured their willingness to make use of the materials using IMMS. Study results revealed that the motivational benefit of games does not depend on gender, computer skills, or experience playing games. In another study, researchers monitor the effect of ARCS on students' motivation towards mathematics (Dede, 2003). In this study, the ARCS motivational model was applied in the design of the course and the student motivation was measured within control and treatment groups. Results revealed no significant difference between the groups' motivation scores.

A review of the literature reveals that most of the studies related to ARCS are about using the model in the design and development of motivation in the learning process. In the design of the blended course for this study, Keller's ARCS motivational design model is used along with Chickering and Gamson's GPP to establish the pedagogical and technological framework, and students' perceptions were gathered regarding the principles and motivations of ARCS.

2.6. Importance of Technology in Teacher Education Courses

"School Experience I," was an undergraduate course taken by all students in education faculties. It is a required three credit course for 1st year CEIT students. The course had no pre-requisites and the first step of other teacher education courses. The typical course schedule consists of one hour of lecture and four hours of observations per week. Throughout the course it often focused on basic skills of being a teacher and gaining experience as a teacher. Students visit K-12 schools with the idea of they may learn by observing behavior modeled by others. They are expected to observe mentor teachers' behaviors in practice schools. More detailed information about the course and the reasons for designing in blended mode is provided in the following chapter.

Teacher education has been an important subject in several countries and Kiraz (2003) points on this importance "the professional growth of teacher candidates has been an important aspect of many of the reform movements" (p. 75). In our society, teachers are given professional status. As experts and professionals, they are expected to use best practice to help students learn essential skills and attitudes. Preservice teacher education programs have gradually taken on the task of preparing future educators. It is evident the investment in technology cannot be fully effective unless teachers receive necessary training and support to become fully capable of using these technologies (Gürbüz, Yıldırım, & Özden, 2001). De Jong (2000) points on ICT integration and technology use for orienting the new era's needs. Although the faculties are sometimes not so volunteered of integrating new technologies to learning, the curriculum of teacher education is rich

enough to use new pedagogical approaches (Sprague, 2006). 21st century preservice teacher education programs should use all the advantage of technology and design courses which the students can benefit from time and place-bounded for preparing future educators. Also Baran (2007) and Goktas (2006) pointed that when looked the history of teacher education in Turkey, there should be needed more technology-based solutions. In Turkey, there are studies investigating teacher education courses in different areas (Aydın, Selçuk, & Yeşilyurt, 2007; Davran, 2006; Dursun & Kuzu, 2006; Güven, 2004; Kudu, Özbek, & Bindak, 2006; Yapıcı & Yapıcı, 2004). Kudu, Özbek, and Bindak (2006) investigated students' perceptions in a traditional teacher education course and results revealed inadequacy of the course time and interaction problems between schools, faculty and students. Also studies done by Aydın, Selçuk, and Yeşilyurt (2007); and Yapıcı and Yapıcı (2004) support that by determining some interaction problems between the mentor teachers with students, and students with each other and also the faculty. Communication problems occurred by being responsible from a large number of students, one other determined problem in this study. The studies showed changes in the design of teacher education courses by gathering technological improvements might provide solutions to the problems. This study might contribute the literature from this side.

2.7. Summary of the Chapter

Different studies discussed above about distance education, Web-based instruction, and blended learning showed technology has a critical role in instruction as in other areas and there is a growing trend on technology-based learning environments. The literature indicated that there are many studies reflected that both purely face-to-face and purely online learning designs have advantages and disadvantages, and thus blended environments might be a good solution that takes bests of these environments and creates an advantageous one. At this point the design of the blended course gains importance with appropriate pedagogical methods, teaching tools, and an appropriate blend of face-to-face and Web applications. In this study Chickering and Gamson's Seven Principles for Good

Practice and Keller's ARCS motivational design model are used as the general framework. Thus the teacher education course is redesigned in blended mode by taking GPP and ARCS. Literature shows GPP have been used as a conceptual model for planning and assessing education and have set standards for undergraduate instruction. Also principles have been used to enhance the quality of teaching in traditional face-to-face classrooms; however, with the increase in offerings of online education, they have been revisited in the context of technology in general and online courses. In this study principles are incorporated to a blended course which is not common in the literature and students' perceptions gathered. Literature covers many reasons that linked to poor motivation in both traditional and mostly online courses some sourced from dropouts or low completion rates. Thus with the need of improvement of the motivational quality of blended designed course ARCS provided a framework. Literature reveals the evaluations provides feedback gathered from learners to the instructors, faculty, and designers of the courses and this can continuously improve the quality of these courses. Thus students' perceptions and motivation were gathered regarding the issue.

CHAPTER 3

RESEARCH METHODOLOGY

This chapter describes the research methods and procedures employed in the research study. It includes sections describing the design of the research and learning environment, the participants, the instrumentation, the data collection and analysis procedures, validity and reliability issues, and the limitations of the study.

3.1. Design of the Study

The purpose of this study was to investigate the perceptions and motivations of learners in the blended course relative to the use of Chickering and Gamson's (1987) Seven Principles for Good Practice in Undergraduate Education and Keller's ARCS motivational design model. Moving from the intent of this research study the following research questions were investigated:

1. What are learners' perceptions in the blended course?
    - What are learners' perceptions in the blended course in relation to GPP?

2. What are learners' motivations in the blended course aligned with components of Keller's ARCS motivational design model?
3. What are learners' motivations for the course Web site aligned with components of Keller's ARCS motivational design model?
4. Is there a relationship between GPP and learner motivation aligned with components of Keller's ARCS motivational design model?

In order to answer the research questions, a mixed method approach as described by Johnson and Christensen (2004) was used as the primary design for the study which "involves the mixing of quantitative and qualitative research methods, approaches or paradigm characteristics" (p. 30). Mixed method research is good to get the strengths of both qualitative and quantitative research techniques in a single study (Creswell, 2005; Greene & Caracelli, 1997; Johnson & Christensen, 2004; Tashakkori & Teddlie, 2002) and proponents believe it helps to improve the quality of the research. Greene, Caracelli, and Graham (1989) summarize mixed method approach as:

> "A design strategy is that all methods have inherited biases and limitations, so use of only one method to assess given phenomenon will inevitably yield biased and limited results. However, when two or more methods that have offsetting biases are used to assess a given phenomenon, and the results of these methods converge or corroborate one another, then the validity of inquiry findings is enhanced" (p. 256).

3.1.1. Mixed Model or Mixed Method Research?

Mixed research is an emerging field and somewhat controversial. Two major methods of mixed research is discussed as *mixed model research* and *mixed method research* (Johnson & Christensen, 2004; Tashakkori & Teddlie, 2002). *Mixed model research* is described as "quantitative and qualitative approaches are mixed within or across the stages of the research process" (Johnson & Christensen, 2004, p. 415). That means in mixed model research the qualitative and quantitative phases of all three-stage (selecting the research objective, collecting the research data, analyzing the research data) of the research are mixed within stage (within-

stage mixed model research) or across stage (across-stage mixed model research). In contrast to mixed model research in m*ixed method research* the qualitative and quantitative phases are included in the whole study and separate from the other paradigm. Johnson and Christensen explain (2004), "In mixed method research, the researcher systematically uses the qualitative research paradigm for one phase of a research study and the quantitative research paradigm for another phase of the research study" (p. 417). This means the three-stage (selecting the research objective, collecting the research data, analyzing the research data) of the qualitative and quantitative phases of the research are kept separate from each other but conducted as the part of an overall study as utilized in this one. "In mixed method research, the mixing generally is done more at the level of interpretation of the results" (Johnson & Christensen, 2004, p. 418).

In this study, mixed method design was employed for some determined reasons by utilizing interviews, forum transcripts and questionnaires. One of the reasons for using a mixed method approach is the great potential for enhancing understanding of the issues by approaching data both qualitatively and quantitatively for the same purpose. Patton (1987) underlines that combining parts from methodological strategies in data inquiry and analysis approaches is a way of increasing methodological power of the study. Thus because any single source of information cannot be trusted to provide a comprehensive perspective, multiple sources of information were sought (Patton, 1990). Although the additional time and resources necessary for a mixed method approach can be seen as a disadvantage, mixing methods increases the credibility of the study (Johnson & Christensen, 2004). By achieving multiple research methods, stronger evidence can be provided from data collection to the conclusion of study findings. Finally, the mixed method approach was used because quantitative and qualitative methods both have limitations; efforts were made to minimize these disadvantages as rooted from method selection. As Johnson and Christensen (2004) observe, "When mixing data and methods, you should use the fundamental principle of mixed research; that is, you should design your study so that the weaknesses of one method or set of

data are minimized by the use of another method or set of data" (p. 426). Thus by using multiple methods and different data sets, weaknesses were lessened in this research. From the above considerations, the reasons using a mixed method approach can be summarized as (Cresswell, 2005; Greene, Caracelli, & Graham, 1989; Johnson & Christensen, 2004; Patton, 1990; Tashakkori & Teddlie, 2002):

1. Both qualitative and quantitative approaches have own potentials. Thus, combining two methods may offer different perspectives together and provides a better understanding than either type.
2. Both qualitative and quantitative approaches have some biases. Thus, using mixed method design may overcome the weaknesses of one other method in the research study.
3. Mixed method research can provide stronger evidence for conclusion of the research study as it enables using different data collection and analysis techniques.

In the current study, mixed method approach seemed to be the appropriate method because: **(1)** by collecting qualitative and quantitative data, it is planned to gather a broader picture of the data forms (Creswell, 2005), because there is not enough study on Seven Principles for Good Practice on Undergraduate Education in blended courses in Turkey. Thus qualitative and quantitative data provide more data from all peaople in class and also more detailed information about the process. **(2)** Combining the "best" of both qualitative and quantitative research (Creswell, 2005), because both might have some limitations or strengths. The research study based on the redesign of a course in undergraduate level and data collected from the 47 participants in this course. The researcher planned to get all participants' ideas as well as some of them more detailed. Thus she decided mixed method design including gathering and analyzing data from all students (by questionnaires and forum transcripts) and detailed data (by interviews and forum transcripts) from some of them. **(3)** Corraborating the results with different methods using same phenomenon (Greene, Caracelli, & Graham, 1989). The researcher planned mixed

method research by both quantitative and qualitative data that complement each other and provide triangulation.

3.1.2 What is the Type of Mixed Method Design in the Study?

After the researcher identified the study is mixed method research, the next step is to determine the type of mixed method design which some approaches have been advanced in the literature (Creswell, 2005; Greene et al., 1989; Tashakkori & Teddlie, 2002). Cresswell (2005) identified three types of mixed method designs: triangulation mixed method designs, explanatory mixed method designs and exploratory mixed method designs (see Figure 3.1).

In the *triangulation mixed method designs,* the qualitative and quantitative data both collected simultaneously during the study by giving equal priority to both methods. "The basic rational for this design is that one data collection form supplies strengths to offset the weaknesses of the other form" (Creswell, 2005, p. 514). Combining the advantages of qualitative and quantitative data simultaneously in one research study had seen as the strength of triangulation mixed method design while making comparable analysis for either similar or dissimilar results. In e*xplanatory mixed method design,* the researcher collects firstly the quantitative data and then qualitative data. That means the priority is in quantitative data collection and analysis in explanatory mixed method design. Additionally "the researcher uses the qualitative data to refine the results from the quantitative data" (Creswell, 2005, p. 515). The third design type is *exploratory mixed method designs* in which the emphasis is in qualitative data. Creswell (2005) explains the exploratory design process as "first gathering qualitative data to explore a phenomenon, and then collecting quantitative data to explain relationships found in the qualitative data" (p. 516). In this type, there is a sequence as in explanatory design, but qualitative process provides the basics and quantitative data helps to explain these qualitative findings. All the details related to types of mixed method design is shown in Figure 3.1.

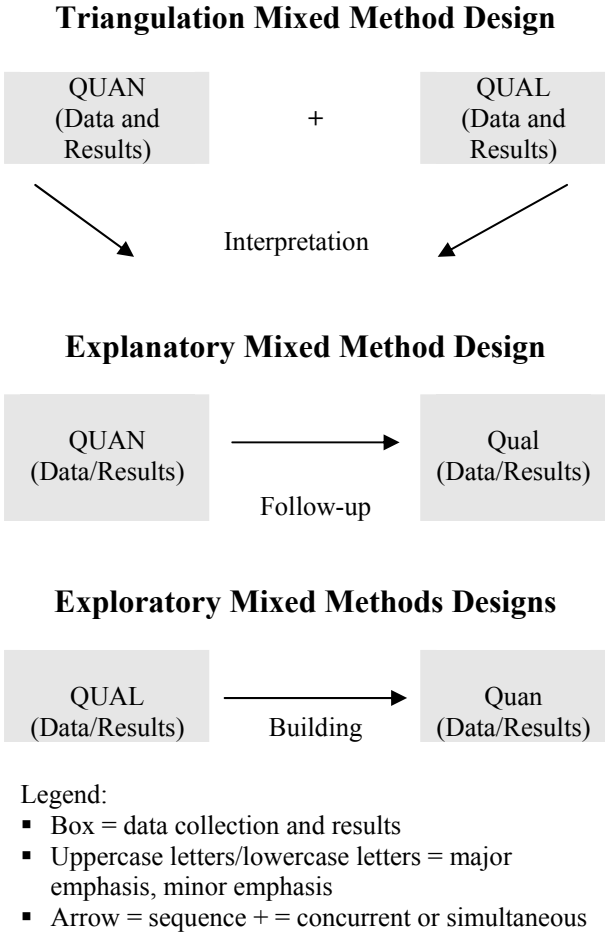

Figure 3.1 Types of Mixed Method Designs (Adapted from Cresswell, 2005)

For to determine the type of mixed method research, the researcher asked the following questions as Creswell (2005) suggested:

Question 1: What priority or weight does the researcher give to the quantitative and qualitative data collection?

Question 2: What is the sequence of collecting the quantitative and qualitative data?

Question 3: How does the researcher actually analyze the data?

(Question 1 in the study) Throughout the study, instead of giving priority to one form of data or one type of method, equal emphasis was given to the methods. Interview data, forum transcripts or instrument scores had seen as equal sources. *(Question 2 in the study)* There was not a determined sequence or phases for collecting the data in the study. While the researcher was reviewing an interview, she was collecting data with an instrument. The qualitative data collection process from forum writings continued throughout the semester, that means at the same time while collecting interview data or applying instruments. *(Question 3 in the study)* The researcher planned to provide a complete picture of the process by mixing the methods in the study. In data analysis the qualitative and quantitative data are not used to refine one other. Instead, both were combined and the researcher compared the results from both quantitative and qualitative analysis. All data interpreted complementarily.

		Time order Decision	
		Concurrent	*Sequential*
Paradigm Emphasis Decision	*Equal Status*	QUAL + QUAN	QUAL → QUAN QUAN → QUAL
	Dominant Status	QUAL + quan	QUAL → quan qual → QUAN
		QUAN + qual	QUAN → qual quan → QUAL

Legend:
- Capital letters denote priority or increased weight
- Lowercase letters denote lower priority or weight
- + (plus) sign represents concurrent collection of data
- → (arrow) sign represents a sequential collection of data

Figure 3.2 Mixed Method Design Matrix (Adapted from Johnson & Christensen, 2004)

The research is not operated largely within one paradigm, instead both qualitative and quantitaive parts had equal weight and the phases conducted approximately concurrently, not sequentially (paradigm emphasis and time order), (Johnson & Christensen, 2004). The qualitative and quantitative parts of the study were mixed after both types of data collected and analyzed. The details are shown in Figure 3.2. Shadowed part represents the applied mixed method design in this study. Thus, moving from these considerations and the responses to above questions in determining the type of mixed method research; a triangulation mixed method design was decided for this study.

3.2. Role of the Researcher

This study included qualitative and quantitative data about students' perceptions and motivations of the blended course as well as data about the course, design issues, and course requirements. In this study, the researcher worked with one undergraduate class in one specified course in an attempt to make a complete exploration of the issue by gathering both qualitative and quantitative data. Throughout the study the researcher tried to be as objective as she could. First of all it would be better to give some information about the researcher and how the idea of this research came from.

The researcher is a research assistant in METU from the year she graduated from the CEIT department in Ankara University in 2002. She experienced face-to-face, online and Web-supported courses as a student during her PhD study both in METU and Purdue University. Also she has experiences with three modes of courses as a course assistant and instructor. Taking these experiences on the base, the researcher decided to design the course in blended mode and get student perceptions. The researcher was also the instructor of the blended course in that semester. During the discussions, she was the moderator of both face-to-face and online discussions. She actively participated to the asynchronous forum discussions and wrote posts including her ideas or respond to the learners. She opened discussion topics determined at the beginning of the semester, made students

having discussions on the subject matter, encouraged them by personal e-mail messages to attend, and respond student questions etc.

In the study process, the researcher: (1) designed the blended environment; (2) developed interview guides; (3) collected quantitative data, entered into SPSS, analyzed and interpreted; (4) made personal observations in the face-to-face classroom, watched and guided asynchronous discussions; (5) transcribed the qualitative data, coded, categorized, analyzed and interpreted, (6) was the instructor of the blended course.

In this study the researcher's role was "*participant-as-observer*" (Johnson & Christensen, 2004, p. 190). Thus she took an insider role and spent her time teaching, observing, and taking field notes. Johnson and Christensen (2004) explain:

> For example you might spend a year teaching at a "model school" that you want to learn about. During the year, you would take extensive field notes, documenting what you observe and what you experience."(p. 189)

Such involvement is an example of being a "complete participant," (Johnson & Christensen, 2004, p. 190) and part of this process requires not telling participants that they are being studied. However this omission causes some ethical problems from the researcher's perspective, so she decided to inform the students that they were in a study and request their permission to record the data. Therefore, the researcher took a participant-as-observer role in the study instead of that of complete participant. Gillham (2000) points on the benefits of being a participant-observer in a research is "…more likely to get to the informal reality. Outsiders of a perceived high or official status may never get there. Trainee teachers, for example, may get a better view of how a school works than a visiting inspector" (p. 28).

In this study, the researcher was the instructor of the course as well, adding the potential bias. Johnson and Christensen (2004) explain researcher bias

"obtaining results consistent with what the researcher wants to find" (p. 249) and propose researchers to have self awareness of potential biases in the study in order to control them. The researcher is aware of the biases and some possible strategies she used to reduce the effect of the researcher bias. These strategies were basicly; describing her role accordingly in the study, informing the students that they were in a study and requesting their permission, informing the research committee members in each step of the study, giving different roles to different researchers in data collection and analysis processes, comparing the study results with literature. The strategies are explained more detailed in validity and reliability sections.

3.3. Participants of the Study

The participants of this study were 47 prospective first grade teachers enrolled in an undergraduate teacher education course, "School Experience I." The course is offered to undergraduates in Department of Computer Education and Instructional Technology (CEIT) at Middle East Technical University (METU) in Ankara, Turkey. The entire enrolled population served as the sample. The students are 1st year CEIT students required to take the course within their curriculum. Except three of them, others took the course as a part of their second term. The majority (19) of their age is 20. 10 students were at the age of 21, 8 students were 19, 4 students were 22, 2 students were 17 and 2 others were 25. One other was 24 and one student at the age of 28. Only the oldest student had graduated from a different university in previous years and was working as a teacher in a private school. All others were full time students and this was their first undergraduate experience. Thirty students were males and the remaining (17) were females. Except five of the students, 42 of them were Turkish students and graduated from a Turkish high school. Nearly half of the students (23) graduated from a vocational (teacher training) high school, and had general information and experience of teacher training and practice hours. Thirteen students graduated from a vocational (technical) high school and more experienced of using computer and the Internet applications.

3.4. Information about CEIT 114 Course

School Experience I is part of the core curriculum in Education Faculties. It is a required three credit course for 1st year CEIT students. The typical course schedule consists of one hour of lecture and four hours of observations per week. In addition to the lecture hours, the prospective teachers visit K-12 schools to make observations. The course mainly calls for making observations, sharing knowledge and experiences, having discussions, and finding solutions to special cases that occur in real-life school settings. The course syllabus (see Appendix A) identifies five specific goals for the end of the semester:

1. Students should have a structured introduction to teaching and the organization of a school.
2. Students should have started acquiring professional skills in computer education relevant to the intended level of teaching through a structured sequence of experiences.
3. Students should have experienced the ways in which pupils learn and develop and learned to recognize the differences between individuals.
4. Students should have worked cooperatively with a number of teachers and developed the personal skills needed to work effectively in schools.
5. Students should have become familiar with the organization, management, resources, and daily routine of a school.

Pre-service teacher education courses often focus on the basic skills of being a teacher. This course is the first of the three required experience courses, and preliminary for the "Teaching Practice" course taken in the final term of the final year. In this course, primary teaching methods involved lecture and in-class discussions. Instructors also expected students to devise explanations and regulations for classroom teaching, student learning from various perspectives, and understand how to organize the classroom environment. As an integral part of this course, the students were assigned to conduct a total of 10 classroom observations and write 9 reports for these observations.

The Idea of Designing CEIT 114 Course in Blended Format

While taking teaching practice courses, the researcher examined that many students complained about the limited peer interaction. They suffered from low motivation and disliked the limited opportunities that they had to share own experiences being teachers. Later, the researcher had the opportunity to offer School Experience courses for her own students over four semesters of traditional face-to-face teaching. Also she had experienced different Web-supported courses and read more about the blended designs. The idea of this research study came from those experiences as a student and instructor. Supporting with the literature and personal experiences, the researcher noticed that students want to be active in the learning process, they like having online contact with others in class, like being involved in online discussions but also they engage in face-to-face class too. Also they like the opportunity to participate in multiple discussions by not restricted the time. Therefore, the blended design idea concreted with the school experience course that includes both face-to-face and online activities.

The data for this study were gathered at the METU, in a teacher education course in the CEIT. The course, "School Experience I," was an undergraduate course taken by all students in education faculties. The course had no pre-requisites. As the name of the course indicates, it often focused on basic skills of being a teacher and gaining experience as a teacher. More detailed information about the course is stated below.

The course has only been offered in traditional face-to-face format in previous years, but for this study, online activities were added to transform it to a blended format. For example, students visit K-12 schools for observation participate in face-to-face lectures at the university, and then share their experiences by asynchronous online forum discussions during the week.

3.5. Context for the Study and Course Design

For the purpose of this study, School Experience I in CEIT department at METU was investigated. This traditional face-to-face course was revised and redesigned according to blended strategies for the study considering GPP and ARCS strategies. The researcher co-taught this course with one other instructor via traditional classroom delivery in 2004-2005.

Because no unique instructional model is a complete solution in the designing of a blended learning environment, this study endeavored to combine two strategies. With this aim, a combination of Chickering and Gamson's Seven Principles for Good Practice (GPP) in undergraduate education and Keller's ARCS Motivational Design Model formed the framework of the study. GPP were selected because they have been used to assess undergraduate educational environments for several years. Furthermore the principles gather together many of the suggestions in the literature for placing the learner at the center of design, such as including active learning, cooperation, and contact between students and instructors. Additionally, there are some GPP applications both in traditional and Web-based learning environments, but as few studies exist for technology-supported instructional environments; one of the aims of this study is to expand that element of the literature. Because motivation is a key issue in technology-based learning designs, Keller's ARCS model was selected to account for the motivational aspects of the study. ARCS was chosen because it is easy to apply to and most importantly, interacts well with other models and strategies.

Using a theoretical basis for including motivation in the instructional design of a blended environment, Keller (1979) developed ARCS. Keller's ARCS motivational design model includes a ten-step procedure (see Figure 3.3) for instructional designers to develop motivational systems. In the present study the procedure included the following steps:

Step 1. Obtain course information

Step 2. Obtain audience information

Step 3. Analyze audience

Step 4. Analyze existing materials

Step 5. List objectives and assessments

Step 6. List potential tactics

Step 7. Select and design tactics

Step 8. Integrate with instruction

Step 9. Select and develop materials

Step 10. Evaluate and revise

These steps persisted through the entire research process, from planning to implementation of the blended environment. Details of these processes are summarized below:

1. *Obtain course information*: The researchers worked closely with the instructor who presented the course in traditional face-to-face format. In the process, the course materials and assignments were examined, and some observations were made regarding the lessons.

2. *Obtain audience information*: Learners' attitudes were collected about the previous design (face-to-face) and their expectations about the blended design were identified.

3. *Analyze audience*: Observations and some pilot interviews were conducted to determine the necessities of the learners in the course while supporting the course with online applications and redesigning it in a blended format. By interviewing the course instructor and students, analysis was performed regarding their motivational concerns.

4. *Analyze existing materials*: The interviews with the course instructor and the learners helped provide information about the deficiencies of content and the materials used throughout the course.

5. *List objectives and assessments*: In this step, the course goals were identified in relation to motivation for the blended design according to learner characteristics.

6. *List potential tactics*: Tactics were determined for use throughout the semester.

7. *Select and design tactics:* Tactics and strategies were selected using Keller's ARCS model and Chickering and Gamsons' GPP, and the details are described below.

8. *Integrate with instruction*: The strategies chosen above were integrated into the blended learning design in this step.

9. *Select and develop materials*: In a blended design, issues needed to be addressed for both face-to-face and online settings. The course syllabus and materials were planned and prepared, ill-structured scenarios were designed, and activities were developed for observation, Web, and face-to-face hours.

10. *Evaluate and revise*: Formative and summative evaluations were planned in this step. The blended design course was developed and improved through formative evaluation. The formative evaluations were conducted through OMPs (Chizmar & Ostrosky, 1998), perception questionnaires, and interviews. Additionally Keller's motivation instruments CIS and IMMS provided additional data for measures of motivation.

In addition to the ARCS motivational design model, Chickering and Gamson's GPP were used in design, teaching, and delivery and to establish the pedagogical framework of the blended course. These principles explained how to facilitate students in a blended environment and suggested some activities that contribute to the teaching and learning process. To summarize, the ARCS Motivational Design model and the Seven Principles of Good Practice in undergraduate education led the way in the design and delivery process to maximize the benefits of the blended learning environment.

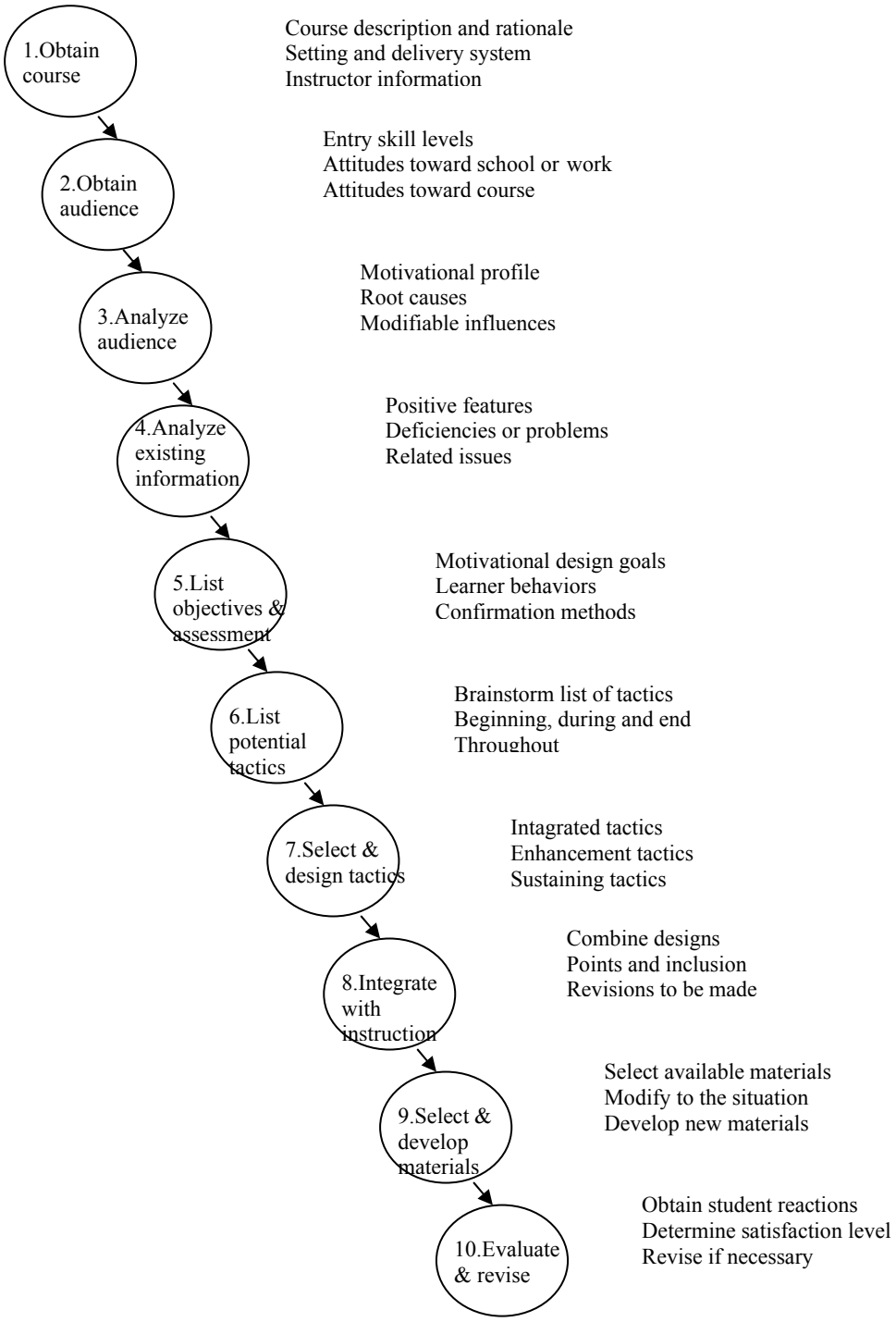

Figure 3.3 Steps in Motivational Design (Adapted from Keller, 1999a)

3.5.1. Course Analysis and the Need for a New Design

Designing a learning environment begins with collecting information (Steps 1 and 2 of the ARCS Motivational Design Model) and then analyzing it (Steps 3 and 4) according to the objectives (Step 5; Keller, 1999a). Thus, in the analysis process, the researcher worked closely with the instructor who taught the course in traditional face-to-face format. During the process, the course materials were examined, learners analyzed, and learners' attitudes toward the learning environment identified. The details of the procedure are described below.

At the beginning of the study (see timeline in Table 3.1) an analysis of the needs was necessary to develop a successful blended learning delivery method. To define the needs, an analysis of the existing traditional delivery process was conducted. Observations and informal interviews were conducted students who took the course in its traditional face-to-face format. Because the researcher was one of instructors of the face-to-face sections, these interviews allowed her to verify the accuracy of the impressions she gained while teaching the course. During the interviews the researcher learned about the students' experiences and expectations, as well as the gaps between them. The findings of these pilot interviews shed light on the necessities of the learners in the course while supporting the course with online applications and redesigning it in a blended format. Out of 55 students who took the course that semester, six were selected purposefully who semi-structured pilot interviews.

The researcher developed an interview guide to gauge the ideas and expectations of students who took the CEIT 114 course in the 2004-2005 spring semester. Appendix B includes the questions that were used during pilot student interviews. The questions were aimed to gather data about their experiences with the traditional delivery format of the course and also to gather their expectations for the course. Researcher also attempted to gather information about the Web activities students used in other courses. A second semi-structured interview conducted with the instructors of the face-to-face course to investigate the

instructor's experiences and suggestions. To acquire more data, three additional open-ended questions were included addressing students' ideas at the end of the semester about what their expectations had been for the School Experience course, how their expectations were shaped by the specifics of the course (interaction, material support, context, procedures, teaching-learning process, etc.) and what aspects of the learning management system they used and how the system could be improved. The comments regarding the course procedure that were taken from interviews and anonymous evaluations, including the open-ended questions, are shown in Table 3.2.

Throughout the pilot interviews, the researcher gathered student and instructor evaluations. These evaluations revealed critical issues about the organization of the course, the interaction of people concerned with the course, and the Web support issues. Findings of these interviews guided the redesign of the course. The primary goal was to replicate the successful strategies of the face-to-face design and broaden the learning opportunities by including virtual design. Then, the following gaps between the existing process and needs were identified:

- The existing delivery limited learner interaction.
- The existing delivery had limited use of multimedia.
- Student sharing was limited.
- The design was not flexible.
- Learners demonstrated low motivation to access the course. (Although the students were in Education Faculty, they were not motivated by the learning process of this course. Keller (1987b) argues that if the identified "problem is one of improving the motivation appeal of instruction for a given audience, then it is appropriate to use the model" (p. 6). This gap reinforced the need to include a motivational model in the design process.)

Table 3.1 Summary of Procedures and Timeline Combined with ARCS' Steps

Date	Procedure	Steps in ARCS Model
March - May 2005 (Pilot interviews)	• Doing interviews with students took the course in the traditional way • Doing interviews with the course instructor who taught the course in the traditional way	Step 1. Obtain course information Step 2. Obtain audience information Step 3. Analyze audience Step 4. Analyze existing materials
June - September 2005	• Designing the course based on interview information • Preparing the necessary documents and materials for the course • Designing course Web page • Arranging materials on course Web page	Step 5. List objectives and assessments Step 6. List potential tactics Step 7. Select and design tactics Step 8. Integrate with instruction Step 9. Select and develop materials
December 2005	• Usability test of the course Web site (user test and expert check)	Step 10. Evaluate and revise
January-February, 2006	• Redesigning the course Web site according to the usability test results • Pilot study of the course Web site	Step 5. List objectives and assessments Step 6. List potential tactics Step 7. Select and design tactics Step 8. Integrate with instruction Step 9. Select and develop materials
February - March, 2006	• Pilot of the course Web site and the environment • Making modifications of the environment	Step 7. Select and design tactics Step 8. Integrate with instruction Step 9. Select and develop materials
March - May 2006	• Implementation period (the students took the course in blended format)	Step 10. Evaluate and revise

Table 3.2: Student and Instructor Evaluations of the Face-to-Face Course

Course Organization	Limited discussion times Limited feedback from peers Getting delayed feedback Benefits of having discussions about student experiences Benefits of discussions with experienced teachers Contribution of discussions to personal development Contribution of discussions to professional development Learning from each other through discussions Limits on personal expression Need extension of the discussion sections Having equal chance in classroom Everyone needs a chance to share his/her thoughts Could not always get documents when necessary
Internet Support and Suggestions	Shy students cannot talk in classroom An environment to freely share experiences Internet provides support for the course Sharing different resources on the Internet Using Internet for searching instead of entertainment Using chat and forums ensure comfort and ease Solving problems in forum by asking other students Forums support communication Forums extend continuance of discussions Forums provide written sources for future review Online environment supports to the students who miss the lecture Limited material support of the course Flexibility Work from home
Interaction	Announcement problems Limited interaction between instructor and students Limited interaction with fellow students

3.5.2. Components of the Blended Design and the Pedagogical Structure

3.5.2.1. GPP in Course Design

In designing the blended course the emphasis was on creating a more efficient, flexible, practical, and student-based environment that enabled more interaction between learners. Thus the design and development of blended learning solutions should be pedagogically driven. In this blended course, the instructor aimed to create an active learning environment in which students were responsible for their own learning, were involved in the process, and generated personal learning strategies. Thus, the instructor attempted to provide authentic learning

tasks in both online and face-to-face processes for the students. In these sections, the design framework will be explored in relation to Chickering and Gamson's (1987) Seven Principles for Good Practice as a guideline to establish the pedagogical process as well as in relation to Keller's four basic categories (attention, relevance, confidence, satisfaction) of motivational conditions. Finally, the online environment will be described in detail. Several studies (Lang, 2000; Testa, 2000) refer to GPP in undergraduate education as a guideline for the pedagogical process in learning environments. Below, the principles are taken into consideration in the design framework of the blended course.

Principle 1: Good Practice Encourages Student-Faculty Contact. Chickering and Gamson (1991) stress that faculty who encourage contact with the student in and out of the classroom enhance the motivation of the student, the student's intellectual commitment, and the student's personal development. In face-to-face lecture hours, student contact occurred through informal discussions. The course designed in a flexible schedule to enable this principle both in online and face-to-face sessions. E-mails and forums were the two main tools used for communicating out of classroom. Students had the opportunity to contact the course instructor, course assistants, and mentor teachers by e-mail any time. A standard response time of 48 hours was determined for the course instructor to respond student questions. Also the instructor planned to use e-mails for student tracking. She sent several e-mails to the students who were not active in online or face-to-face discussions, not attending to the courses, or changed behaviors in the course. Because Chickering and Gamson (1991) pointed out how knowing faculty members helps students think about the future, a meeting was designed during the first face-to-face lecture between the course instructor, course assistants and students who were taking the course in that semester. Furthermore, because the course has a K-12 school side, a meeting took place between the course instructor, mentor teachers and students before the observations hours began. In these meetings, both sides shared e-mails and telephone numbers to allow for easy and open communication.

One approach used to increase student-instructor interaction was the One-Minute Paper (OMP), which was designed to obtain regular feedback from students (Chizmar & Ostrosky, 1998; Cross & Angelo, 1988). The OMP application was adapted from Chizmar and Walbert's (1999) study to use in the blended design with the aim of increasing students' interest. This process involved firstly having discussions in asynchronous online environment by determined scenarios followed by two questions posed to students about that week's online discussion topic during lecture hours. These efforts attempted to merge online and face-to-face activities. The OMP answers gathered from students were edited by the instructor and posted to the asynchronous course forum to demonstrate students' understanding of the main points. Because of the immense value of OMP, more details about it's use in the blended course are below sections.

Sharing academic goals with instructors determined as another way of supporting student-instructor contact (Taylor, 2002). Thus, during face-to-face lecture hours, the opportunity was offered to students to discuss their intentions about their futures as teachers, namely their future profession. In addition several teachers who thought as good samples in their jobs were invited to the face-to-face classroom sessions, with the hope that meeting with others would help prospective teachers in planning their careers.

Principle 2: Good Practice Encourages Cooperation Among Students. Chickering and Gamson (1987) state that learners improve their learning and thinking by sharing ideas with others rather than isolating them. Thus, cooperative learning activities were incorporated as instructional strategy in the course. Although it is true that Internet technologies enhance student cooperation, in this course mostly the cooperative activities took place during face-to-face activities. During asynchronous online discussions, students communicated with their large class groups or divided into two groups. Small group or pair discussions were provided in face-to-face mode sometimes according to their preference, but sometimes obligated. In the chat facility, students could talk in small groups or pairs as they chose. In face-to-face lectures, the activities planned to be cooperative

and work in pairs. Additionally the observation schools hour activities were determined to work in small groups or paired. Although it was expected to submit individual reports at the end, they were encouraged to write after sharing their experiences with their partners. Also homework assignments designed that enable students working in pairs or groups of three to foster cooperative activities and information sharing.

Principle 3: Good Practice Encourages Active Learning. This principle states that learning should not be seen as a "spectator sport." Thus students do not learn simply by sitting in class, listening to teachers, and memorizing lectures. Instead students must communicate with others, analyze real life situations, relate to past experiences, and apply information to their daily lives by gaining new experiences (Chickering & Gamson, 1987). In the design process one of the aims to redesign the course in blended format was increasing availability and accessibility and this idea was directly supported by active learning principles. All the course related documents stored to the course Web site to provide an accessible place anywhere and anytime. Also by using e-mails and the forum page students provided asking questions and interacting with classmates or course instructors. In a learning environment, it is the instructors' responsibility to encourage students to consider learning a valuable task. Moving from this point, throughout the course, students sent to observation schools to actively construct knowledge of real situations. Also opportunities enabled to take active roles in designing some parts of courses in observation schools and to teach some sessions under the guidance of mentor teachers. Additionally online discussions designed to share experienced with their classmates and to receive personal critiques and feedback.

One other considered issue in the design of this blended course is authenticity. Authenticity is considered as one of the most important attributes when creating active learning environments (Grabinger & Dunlap, 2000), and noted that using authentic assignments as the strength of courses (Graham et al., 2000). Also, Jonassen (1998) believes that learners should be presented with interesting, relevant, and meaningful problems to solve and the opportunity to

construct their own ideas. Thus providing realistic problems that are directly relevant to student needs and experiences were given special attention in the design process. To enhance relevance of course contents and increase authenticity, the activities were selected in accordance with students' educational backgrounds, experiences, and future expectations. Most of the scenarios conducted in the online part of the course were written by the help of the mentor teachers, directly from their own experiences. As the literature supports, cases capture students' attention and motivate them to engage in meaningful learning (Miltiadou & Savenye, 2003); students were encouraged to discuss the ill-structured scenarios related to their profession each week in the asynchronous online forum. Throughout these discussions, online communication tools were used to support their practice of learning and to develop interactivity.

The feature of active learning emerges from constructivism and is a learner-centered philosophy rather than teacher-directed which students play a central role. Also the course was designed to be discussion and interaction based, thus making students more active in their own learning processes. There are varieties of interaction tools available to use in online environments; in this blended course, asynchronous discussion boards and e-mails served as the basic interaction tools for students. Asynchronous discussions promoted student-student interaction, and these discussions continued throughout the week, initiated during face-to-face lectures and sustained online. Discussion topics were posted each week, usually ill-structured scenarios, and students were required to read them, investigate the topic, read various postings, post their thoughts, and respond to other students. By these discussions students planned to be active all the week, instead of only lecture hours and also were an active participant of the learning process by responding other students. Also e-mails were used for encouraging students in their learning by special messages.

Principle 4: Good Practice Gives Prompt Feedback. Providing frequent feedback on students' performance helps them to assess what they have learned and still they need to learn (Chickering & Ehrmann, 1996). One of the planned benefits

of designing the course in a blended format was the ability to provide quick contact and feedback. Because technology offers the possibility of providing learners timely and detailed feedback. At this point e-mails and asynchronous online forums used to allow feedback for mostly online and sometimes face-to-face activities. Supporting students with quick and quality feedback was one of the aims while designing the course in the blended format thus it supports technology. Throughout the study, e-mails planned to be used to give individual feedback something that is special to the student. But the asynchronous online forums planned to be used to give feedback to both individuals and also student groups in the forum because all the people read the forum messages. Thus all the learners in the forum might benefit from the feedbacks. Additionally one advantage of the forums used in this study was students could give feedback to peers instead of only getting feedbacks from the course instructor.

One other way to obtain feedback in the course was using OMPs. OMPs designed to provide feedback on the asynchronous online discussions. These were posed to students at the conclusion of each topic concerning what they learned. Each OMP was applied in face-to-face class sessions as well, relating to that week's online discussion scenario: What were the most important things they learned from that week's scenario? What was the least clear idea presented?" Using OMPs blended feedback for online activities during face-to-face hours.

Principle 5: Good Practice Emphasizes Time on Task. In this principle, the concept is proposed that greater amounts of time and energy spent on learning leads to greater learning. Thus students need to learn to use their time well, and technology can increase time on task by making studying more efficient (Chickering & Ehrmann, 2001). In this study, technology was used to extend learning beyond classroom hours. Student learning continued all week via asynchronous online discussions. Additionally, any time, anywhere access was available for all materials on the course Web page. New assignments, deadlines, and important reminders were automatically presented when students accessed the course Web site with the aim to stay on the tasks. It was planned to save time by

using the Web site for storing required course documents or for informing students about events, encouraging students to focus their energy on learning instead of paper work or concerns about the course schedule.

Principle 6: Good Practice Communicates High Expectations. This principle implies that if you expect more, you get more. Chickering and Gamson (1987) explain "Expecting students to perform well becomes a self-fulfilling prophecy when teachers and institutions hold high expectations for them and make extra efforts" (p. 4). In this course, one way to communicate high expectations is by assigning the same deadlines for assignments and homeworks as typically applied in course designs. Minor penalties also existed, such as lowering grades for late assignments. Addressing students by name in face-to-face lectures, e-mails, or posts are other ways of demonstrating high expectations. It was hoped students might feel that the instructor knows that student and thus s/he needs to do better in the course. At the beginning of the semester, a course schedule was given to the students providing information about how to access their grades, what to expect during observations, how to use the course Web page, and how to utilize the forum; a detailed syllabus was also prepared and uploaded to the course Web site. Publishing student work such as lesson plans on the course Web page was yet another way used with an aim to motivate student learning and increase their expectations.

Principle 7: Good Practice Respects Diverse Talents and Ways of Learning. Students have diverse backgrounds and have different learning styles. In this principle, Chickering and Gamson (1987) explain, "Students need the opportunity to show their talents and learn in ways that work for them" (p. 4). In the course process the instructor knew her duties that her role was more about helping learners to construct their own knowledge instead of lecturing them. There were different activities planned for different needs and the blended course supported these by individual and cooperative activities. By individualizing activities, it was aimed students could complete tasks at their own pace by using their own way of learning. Also different materials were provided especially via the power of technology;

students were supported by visuals, video clips, and timely applications. All assignments and resources were stored on the course Web page for students who learn better by exploring on their own instead of absorbing lectures or who need more time to explore the materials. Threaded asynchronous discussions planned to be continued all semester, giving students the opportunity to express themselves by writing but not giving up the face-to-face discussions for students who benefit from being face-to-face much more. Authentic ill-structured scenarios were developed and discussed by students throughout the semester, which required them to perform analysis, synthesis, and investigation of real-life situations. A variety of activities tried to be assigned to students to provide them diversity in their learning.

3.5.2.2. ARCS in Course Design

Keller (1999a) argues although motivation is idiosyncratic, learner motivation can also be affected by external factors. He identified these factors include systematic instructional design of tactics and strategies intended to improve motivation and performance, as well as encouragement and support by instructors, tutors, or peers. Thus, in the design of the blended environment ARCS motivational design model was used for including motivation. ARCS is a method for improving the motivational appeal of instruction to provide suggestions for the designers (Keller & Suzuki, 2004). In this study it is decided to incorporate ARCS in the blended course design to support learners' motivation. For each of the phases, Keller (1987c) recommended activities that adapted in this blended course.

Attention: Keller (1987c) argued that attention is prerequisite for learning which the first condition of motivation is. As suggested it was given more importance to the design of the course Web site to gain learners' attention to the content of the screen. Thus usability of the course Web site was given special attention and detailed usability studies had done with the learners. Varying medium such as video clips or films was used during courses to gain learners' attention and these documents stored in course Web page. Also interesting articles, appropriate photographs, up to date news in newspapers related to students' future profession

was integrated. The Internet provided reaching actual news that used to attract learner interest. Also different real-life scenarios and small video clips captured from real classrooms were integrated to the discussion hours for having a connection with students' real life and what they were learning. With the aim of sustained attention, active student participation tried to be increased with discussion topics, peer works, cooperative activities both in face-to-face and online environments. Also curiosity tried to be aroused by having combined activities between online and face-to-face environments in the blended course. This is provided by giving and starting an assignment in face-to-face course and then continuing that by online discussions or vice versa. For example assignments were provided that required exploration of different sources and libraries (all over the world libraries online resources) from the Internet and students shared these in face-to-face classes. Internet searchable activities designed to attract student curiosity and make them more motivated.

Relevance: In the learning design for having a more relevant instruction one focused issue was relating the students' future activities. Thus, authentic activities which were relevant to students' future jobs and future expectations were integrated to both face-to-face and online processes. Real life ill-structured scenarios planned to be discussed in asynchronous online forums and thus opportunity was given for detailed thinking of the problem from different perspectives. Also, opportunities provided students to share experiences in practice schools (usually about what they observe in observation school hours) in face-to-face lectures to share relevant experiences. By the blended design an opportunity provided to each student expressing what s/he wanted to, instead of the only ones who feel comfortable reflecting in class by asynchronous online forums. The blended design used to support students with both online and face-to-face modes that each student had equal opportunity to share experiences they got by asynchronous discussions and also they did not feel isolated in reason for they met face-to-face. This circulation was used another way to increase the relevance in the learning design to motivate them. Working with real examples used to help

students motivated because of increasing the meaningfulness and thus relevance. In the design and development process (also throughout the lesson), researchers worked with K-12 and high schools teachers to find videos, ill-structured scenario examples, course materials to get representative examples for using in the course. On the other hand, students had opportunity researching on the subject without relating on the instructor. For example students investigated on the classroom management strategies and found some videos about this from the Internet. Thus, Internet used to allow them to educate themselves relevant to their future jobs.

Confidence: Keller (1999b) points that the reason of the students' low confidence is about the reason that they do not know exactly what is expected from them. Thus learning objectives pointed accordingly in the course. At this point, a detailed course syllabus was prepared and were put on the Web page for students all time access. Also the points on the syllabus were discussed with students to make the issues clearer about expectations throughout the course. It is explored the course was first experience that they were having in blended fashion. Thus, to make them more comfortable asynchronous online discussion activities were planned at the first weeks of the blended course to make them accustomed of the environment. At the beginning of the semester, two different forum subjects opened one about "introducing yourself" to the class and the other "what is blended learning environments and what do you think about" to feel them more confident about communication technologies. It was thought having previous discussions would help to avoid their anxiety. Also by asynchronous online forums, the discussions were extended along the week to make students feel comfortable of time and students set their own time schedule for online activities. The blended design supported both written and oral communications. In a group there might be students who like expressing themselves effectively in face-to-face discussions but also there might be some who cannot express themselves easily while speaking but feel more comfortable in writing. Thus, in blended environments designed for all students that had different needs and feel them more confident with different communication abilities

Satisfaction: Satisfaction is the category that emphasizes on the strategies help learners to feel positive about their achievement. Thus throughout the blended course both in online and face-to-face environments the instructors and technology were employed to give feedback on students' performance. The technological support used to provide giving instant and detailed feedback. In addition to personal feedback, the instructor planned to post weekly feedback to the whole class about their performance and not to feel themselves alone in their learning to make them satisfied. In addition students had the opportunity to apply what they learned in real life setting. By going to practice schools an opportunity had provided making observations on the real environments and applying what they learned in schools. These planned to be used feeling students accomplishment.

3.5.3. The Online Environment

Pre-service teacher education courses often focus on the basic skills of being a teacher. In the School Experience I course, the primary teaching methods involved were lecture hours and in-class discussions. Instructors expected students to devise explanations and regulations for classroom teaching, learn lesson and classroom management skills, understand students from various perspectives, and consider how to organize the classroom environment. As the pilot interviews revealed, in the face-to-face classroom the teaching method was usually expository teaching with little in-class discussion. The students complained about the inadequacy of discussions about the experiences they had during their observations and the limited information exchange between each other. When redesigning the course in blended mode, we tried to be minimized such problems by encouraging communication with peers and instructors without time limitation, expanding access to course documents, and prompting knowledge sharing throughout the week without interruption. In the blended design, the course objectives were divided into those that could be best achieved online and, those which would be best accomplished face-to-face. Ultimately, with the Web supplement, the students could access the syllabus and course materials, obtain outlines of the observation assignments, discuss in the forum environment, read announcements, and link to

other suggested Web sites. The main elements of the Web environment are presented in Figure 3.4.

In order to support the course with Web applications, a course Web site that was developed by Dr. M. Yaşar Özden (2002) and used by some instructors in the CEIT department was modified. The Web site was developed using Active Server Pages (ASP) technology, a scripting programming language. This system offers many advantages to the instructor without requiring knowledge of programming languages.

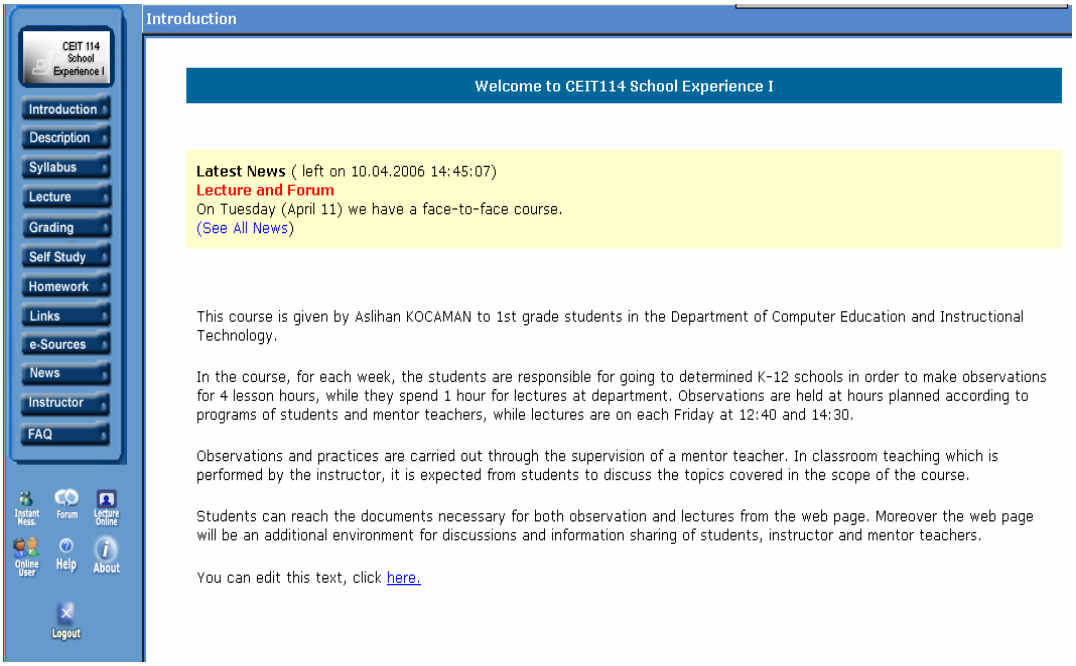

Figure 3.4 General View and the Homepage of the Course Web Site

The main elements of the Web support page include the syllabus, lecture notes, course documents, information, external links, and other supporting materials as seen in Figure 3.4. The system also includes functions such as collecting and returning assignments and documents. On the left down side of the

menu, communication and collaboration tools can be seen that provide students the ability to communicate with each other and the instructors of the course. Instant messaging in chat rooms, threaded discussions in forums and sending e-mails were the interactive features of the system that supported the face-to-face sessions.

In order to enter the course Web page, students must login to a server. At the beginning of the semester, each student was assigned a user name and password. When students logged in and entered the Web site, they saw the introduction page, which welcomed them and provided a brief description of the course. The main menus of the online environment were Introduction, Description, Syllabus, Lecture, Grading, Self Study, Homework, Links, e-Sources, News, Instructor, and FAQ (see Figure 3.5). More detailed information about these menus is provided under the subheadings below.

Because the students had not taken a Web-supported course before, the instructor introduced some important features of the course Web page in the first face-to-face lecture and required students to sign on the system after that lesson to get them accustomed to using the system. All students were encouraged to get familiar with the Web environment. For that reason, warm-up activities took place in the first week of the course to prompt students to access the forum. Throughout the semester, students were encouraged to use the Web environment through supportive e-mails and reminders online and by oral reminders in the face-to-face lectures.

Figure 3.5 General View of the Menus in the Course Web Page

Introduction page: This page (see Figure 3.4) included the description of course content, general objectives, information about the time and place of the course, and basic information about the instructor. The latest news was integrated to the opening of the introduction page.

Description: This menu included more detailed information about the course environment (face-to-face, online, and observation parts) and course objectives.

Syllabus: This contained the detailed course syllabus available and easy to find through the Syllabus tool.

Lecture: This section contained all the resources used in the lecture hours including Microsoft PowerPoint presentation slides, documents used in the course, activity sheets, and videos used in the lectures.

Grading: Grades could be viewed via this menu throughout the semester, including observation responses, collaborative assignments, and homework.

Homework: On this page, student homework assignments from both online and face-to-face hours were provided. The details of the homework, related resources, and links that would help the students were under this menu.

Links: All observation hour documents, activity sheets, observation sheets, schedules of observation hours, observation school lists, and weekly schedules were given in this menu. The students have access to all documents required for their observation hours under this menu.

e-Sources: Different articles about the course, newspaper columns related to the course subject (each week some interesting columns were posted about teachers, being a teacher, education faculties, schools, etc.) and Web page addresses were stored in this menu. The students were responsible for finding related sources, but only the instructor uploaded new documents after approving students' findings.

News: This page was for the news announced by the course instructor and assistants. The students could reach all the news from this page. Additionally, the latest news was also presented on the introduction menu or homepage. When the students logged in, the latest news was displayed. The instructors could add, delete, or modify the news.

Instructor: In this page, the users could find detailed information about the course instructor and assistants. E-mail addresses, telephone numbers, and departmental addresses were stored under this menu, as well as photos. Additionally, students could reach each mentor teachers' (teachers in observation schools) contact information from this menu.

FAQ: This page includes frequently-asked questions such as where students could find additional information about using the course Web site.

Interactivity Tool 1: Chat

The chat tool gives users a chance to communicate with others users synchronously. In order to connect to the chat room, a constant chat link was integrated on the Web page. Chat tool facilitated the interactions between the participants and instructors. Utilizing chat discussions was optional in this study.

Interactivity Tool 2: Forum

Asynchronous online discussions were one of the basic collaboration tools provided by the forums in this study. A constant forum link was integrated on the Web page. Students and instructor could post messages or files to the whole class with this tool. See Figure 3.6 for the general view of the forum page. The Web page had some facilities for forum dialogues to be saved for future reference. Although all the participants had access to the forum, the course instructor was the sole moderator of discussion sessions. The forum activities mostly involved real life examples that students may face in their profession. These activities mostly required students to read from books, articles, resources from Internet, to seek advice from other teachers, and eventually to combine findings with their experiences and post to the forum.

The forum page included different topics and subtopics to be discussed throughout the semester by students. The users submitted their messages under these subheadings. Students could see the number of messages posted for each topic, the date the messages were posted, the most recent post and its author, and the number of posts they had sent. There was a “closing time” assigned for each forum subject (usually one week to 10 days) to encourage students to post timely responses. After the determined time, the forum subject was closed to posts, but remained visible to all site users throughout the semester for review. In other words, the forum users could read all the messages in the asynchronous discussion area but could only write on designated active topics.

Asynchronous online discussions were integrated as a collaborative part of this course. Throughout the course, online discussions were a course requirement. Student participation was expected during the weekly online discussions, which were graded (15 % of the overall course grade) both on the number and, more importantly, the quality of the messages. In the asynchronous discussion process, ill-structured scenarios and related questions were presented by the course instructor. This discussion process and the details are presented below.

In addition to the graded topics, participants also had a voluntary topic called "Student Diary" (see Figure 3.6). The two subtopics were "Course and Observation School Issues" and "Technical and Content Issues," where students could share suggestions, opinions, expectations, and problems as well as likes and dislikes about the course Web environment, the lectures, or the observation hours.

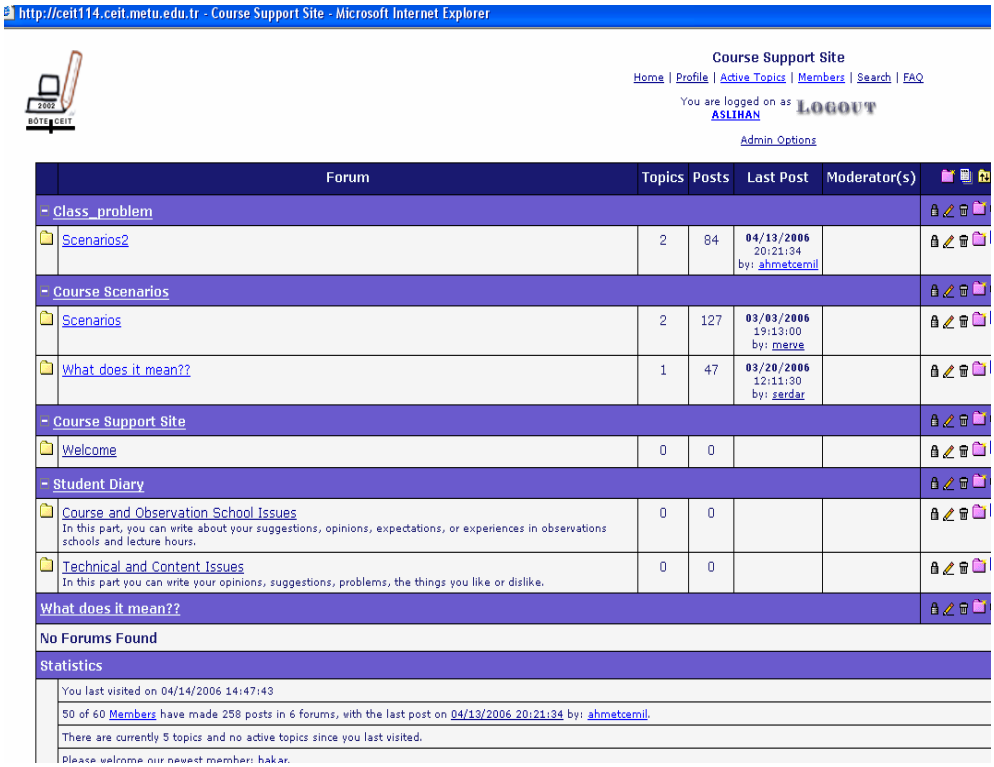

Figure 3.6 General View of Forum Page

3.5.3.1. Asynchronous Online Discussion Process in the Blended Course

Although it is generally accepted that people learn best by doing, in some situations, learning by doing is not the most viable option. As Schank (1993/1994) stated, learning by doing can be dangerous, expensive, inefficient (in some cases it takes a long time to gather knowledge), or unable to provide relevant information. In teacher education, although the students have chance to observe and gain real experience in schools, such experience is usually restricted by time. Moreover, students may feel challenged to consider an idea during observation, investigate it, and develop a solution relevant to children and a school environment. Ill-structured scenarios were used because they provide many advantages for experiencing and thinking about different situations that students may face in their future professional lives (Kocaman & Özden, 2006). Thus ill-structured scenarios were integrated as a framework in the online asynchronous part of the course to anchor prospective teachers' work in the context of real-life problem solving and support the course content with authentic, student-driven inquiry. The scenarios were designed in the ill-structured manner to allow for many alternative solutions to the problems instead of a single absolute answer (Jonassen, 2002).

The scenarios were ill-defined and open-ended and represented authentic tasks the way students would face them in their real lives and during observations (a sample scenario is provided in Appendix C). The learners not only had to reply to the questions posed by the tutor but also had to comment on the responses and ideas of other learners. In order to solve the online scenarios, students conducted an individual analysis of the case, then investigated the issue, and shared preliminary ideas with their friends in the forum environment. Based on the comments and discussions with others, the students reflected back on the scenario. A typical threaded discussion proceeded in the following fashion:

- The course content was broken into weekly (or ten day) topics. At determined dates, an ill-structured scenario was presented by the instructor to the discussion forum.

- Names of required sources were given to students for investigation.
- Students received notification about a new discussion topic via a note in the announcements area.
- Each student read the scenarios, conducted investigations about the questions, and wrote their own interpretations (with supporting from the literature when needed) to the asynchronous forum for others to read and discuss (See Figure 3.7 for the guidelines of student responses).

Be careful on these issues while responding on the questions throughout the discussions:

- You should respond the question with at least three sentences.
- If needed in the discussion topic, you need to support your argument by the theoretical knowledge.
- Don't forget to write the references when you get an idea from someone else's studies.
- You should send response after your classmates' responses (respond at least one friend's post).
- Your opinions and experiences are important in this discussion process. In each post you should write something opinion based.
- Don't forget, instead of the length or number, the quality of your posts is important.
- Be polite and objective in your responses.

Figure 3.7 Guidelines for Student Responses in Forum

- All students were required to assess others' findings and opinions at least once during the discussion week.
- During the discussion period, the instructor often followed the students' writings and facilitated, coached, and guided their conversations. She also posted personal notes and feedback throughout the discussion and encouraged them to engage with each other.

- To obtain feedback based on the asynchronous online discussion, OMPs (Chizmar & Ostrosky, 1998) were assigned to students at the conclusion of each topic concerning what they learned. This tool was used to get regular feedback from students about their learning. Each OMP was applied in face-to-face class sessions concerning that week's online discussion scenario:
    - What were the most important things they learned from that week's scenario?
    - What was the least clear idea presented?
- After analyzing OMPs, interesting items were selected and posted on forum for emphasis.
- A summary was sent to the asynchronous forum by the course instructor relating to that week's discussion scenario and the topic was closed.
- In addition to personal feedback, the instructor posted weekly feedback to the whole class about their performance.

3.5.3.2. Usability Test for the Course Web Site

For the aims of this study, a traditional face-to-face course was redesigned with Web applications. A Web page was prepared to be an integral part of the delivery of the course. Testing the usability of the Web page was vital for the interface development and assessment of a usable Web design. As Web support was a primary concern in this study, great importance was placed on the usability. Nielsen (1994) describes a "usable" Web site as one that allows for easy comprehension of the content, has easily remembered navigation, has few errors, and is efficient and pleasant to use. In this respect, two usability studies were conducted by a total of fifteen participants. Usability testing is a seen as the simple and inexpensive tool that benefits both users and the designers of a Web site. The course Web site was first tested by students who would take the course; it was later examined by four experts according to Nielsen's (1994) heuristics. The results of these two different methods were compared and required changes were made on the Web site.

Applying User Test to the Course Web Site

In the Web site design phase, it is important to conduct a user analysis that collects as much information as possible about typical user ideas. The Web site was tested with eleven randomly selected students. Ten tasks (Appendix D) were prepared for the participants, and three open-ended questions were to determine the good and bad points of the Web site. Each task had written on numbered cards and given in an order. The students were asked to "think aloud" and to explain what and why they were doing. The program "Snagit" was also used while the participants were performing the tasks to help the researcher determine which menus the participants navigated and how much time was spent on each task.

Applying Nielsen's Heuristics to the Course Web Site

Nielsen (1994) defined 10 heuristics in order to evaluate the usability of a program. As the second usability study, the course Web site was examined by four experts according to Nielsen's heuristics:

1. Visibility of system status
2. Match between system and the real world
3. User control and freedom
4. Consistency and standards
5. Error prevention
6. Recognition rather than recall
7. Flexibility and efficiency of use
8. Aesthetic and minimalist design
9. Help users recognize, diagnose, and recover from errors
10. Help and documentation

The determined results from both of the usability test evaluations are summarized below; required changes were completed based on these results prior to implementing the course:

- The users and experts explained that the menu buttons were provided in an intentional order, but both evaluation groups expressed frustration over some issues. They explained that there was confusion over the "link" and "e-sources" menus.
- Another issue both the users and experts stressed on was dimension of the icons. Many found "forum, instant messages, lecture online, online user, help, about and logout" icons too small and hard to recognize.
- One important finding of the usability test was related to the FAQ menu. Most of the users and experts had difficulties finding where to change their passwords. Although the password change information was under the FAQ menu, most users felt they should be able to change it from the main forum page because that was the procedure on other courses' Web pages.
- Some experts and users proposed a "members" or "profile" menu to locate information about users.

3.6. Data Collection Methods and Instruments

This study employed a mixed method approach involving qualitative and quantitative components. Thus, multiple sources of information were used for answering the research questions (see Table 3.3). Questionnaires, interviews, forum transcripts, and an instructor diary were the main sources of collecting data. Three questionnaires were used for answering perception and motivation questions: (a) Perception and Principles Questionnaire, (b) Course Interest Survey (CIS) and (c) Instructional Materials Motivation Survey (IMMS). Furthermore, interviews, forum transcripts, open-ended question responses, and the diary provided qualitative data. The blended class started on March 1, 2006, and lasted until the third week of May, but the data collection process extended until the middle of June.

Table 3.3 Mapping the Research Questions, Methods of Data Collection, and Data Analysis.

Research Questions	***Data Collection***	***Data Analysis***
1.What are learners' perceptions in the blended-course? 1.1. What are learners' perceptions in the blended-course in relation to GPP?	1. Perception and Principles Questionnaire 2. Interviews 3. Documentation • Forum transcripts • Instructor diary	Qualitative (by citation from the participants' comments and forum message history) and Quantitative (by frequencies, percentages, means and standard deviations) Methods
2. What are learners' motivations in the blended course aligned with components of Keller's ARCS motivational design model?	1. CIS 2. Interviews 3. Documentation • Forum transcripts • Instructor diary	Qualitative (by citation from the participants' comments and forum message history) Quantitative (by frequencies, percentages, means and standard deviations) Methods
3. What are learners' motivations for the course Web site aligned with components of Keller's ARCS motivational design model?	1. IMMS (last week of April)	Quantitative (by frequencies, percentages, means and standard deviations) Methods
4. Is there a relationship between GPP and learner motivation aligned with components of Keller's ARCS motivational design model? Is there a relationship between GPP and learner motivation aligned with components of Keller's ARCS motivational design model?	1. Perception and Principles Questionnaire 2. CIS	Quantitative (by frequencies, percentages, means and standard deviations) Methods

3.6.1. Motivation Surveys

To determine learners' motivations in a blended course based on the ARCS motivational model, Keller's CIS and IMMS surveys were used. Data from the CIS and IMMS (and attention, relevance, confidence, satisfaction subscores) provided situational measures of motivation. Keller (2006) explains, "The first instrument, called the Course Interest Survey (CIS), was designed to measure students' reactions to classroom instruction. Secondly the Instructional Materials Motivation Survey (IMMS), was designed to measure students' motivational reactions to self-directed instructional materials" (p. 1). CIS and IMMS were designed to investigate how motivated students are, were, or expect to be by a particular course (Keller, 2006). In this study motivation was investigated via a blended learning design. All of the learners were asked to complete the CIS to assess their motivation as it related to the whole blended environment and IMMS related to the instructional material —the Web site—in this course.

The original CIS (Appendix E) is a 34 item survey, and IMMS (Appendix E) has 36 items (See Table 3.5 for the details of both surveys). Both instruments were adapted according to the course needs as proposed Keller (2006). In order to apply the questions to the students in CEIT 114, some items were paraphrased and some were deleted. Both of the scales have been validated by a number of studies, primarily with undergraduate students. Because the academic language is English at METU and foreign students do not know Turkish very well, the surveys were applied in their original language (English). Both surveys were given to five doctoral students and three experts (the study committee members) to check the clarity of the paraphrased items. Then, these instruments were checked by five students by reading aloud. The misunderstood items or words were revised and changed again. The final version of both of the surveys can be found in Appendix F. IMMS was administered the last week of April according to committee members' suggestions, and CIS was given at the end of the semester. Both of the motivation instruments were administered during face-to-face lectures by a

research assistant from a different CEIT department to increase the reliability of answers.

Course Interest Survey (CIS)

CIS was developed by Keller and detailed further by Keller and Subhiyah (1993) to measure situational components of ARCS for learner interest in a particular course. The original survey has 34 items, and despite a few minor adaptations all the items were used for this study (See Table 3.4. for an instrument summary). For example, I used "in this blended course" instead of "in this class." Response scale ranges from 1 (Not True) to 5 (Very True). Thus, the minimum score on the 34 item survey is 34, the maximum is 170, and the midpoint is 102. Keller (2006) found the reliability of the instrument as .95 in total scale and .84 for attention, .84 for relevance, .81 for confidence and .88 for satisfaction. There are five subscales in relation to ARCS components: attention, relevance, confidence, satisfaction, and one for the ARCS total score. Nine of the 34 items had reversed during the analysis.

Instructional Materials Motivation Survey (IMMS)

IMMS is a 36 item survey using a Likert type scale. A total of 33 items were used in this study by paraphrasing some words, adapting per Keller's (2006) suggestion that "instruments can be adapted to fit specific situations" (p.1). Ten of these 33 items reversed during the data analysis (See Table 3.4. for an instrument summary). There are five subscales in relation to ARCS components, the same as in CIS: attention, relevance, confidence, satisfaction, and one for the ARCS total score. During the implementation of IMMS, the participants were asked to think about each statement in relation to the course Web site they were using and to indicate how true each statement was. As Keller (1993) proposes, the response scale ranges from 1 (Not True) to 5 (Very True); thus, the scores on the 36 item survey can be between the scores of 36 and 180, with a midpoint of 108. Keller (2006) found the reliability of the IMMS instrument as .96 in total scale and .89 for

attention, .81 for relevance, .90 for confidence and .92 for satisfaction. In this study, because only 33 items were used, the minimum and maximum points decreased.

3.6.2. Perception and Principles Questionnaire

A third instrument was used to measure the students' perceptions in the blended course in relation to GPP. The perception instrument used in this study was the Principles and Inventories of Effective Online Teaching questionnaire which was originally developed by the American Association of Higher Education (AAHE). This instrument has been used in many universities in the United States and Canada. It has seven categories compatible with seven principles. In his thesis, Buckley (2003), in collaboration with his course instructor, revised the instrument to design the student perception instrument. Then he piloted the questionnaire and used it his thesis study. In this study, the same instrument was used with some revisions. While the original questionnaire included 57 items, only 43 items met the needs of this study (See Table 3.4. for instrument summary). Four additional demographic questions were added at the beginning of the questionnaire to get information about students' age, gender, graduation school type, and their preference for taking the course (online, face-to-face or blended). Additionally three open-ended questions were added at the end of the instrument to ask for suggestions on improving the blended course, for positive and negative features of the online part of the course, and for positive and negative features of the face-to-face sessions in the blended setting. Because the academic language is English at METU, this questionnaire maintained the original language (English). However, because most of the students involved in the study were second-language speakers of English, question formation and word selection were carefully considered. Thus, the questionnaire was piloted with five randomly selected students in order to verify for suitability and language comprehension. As a result, the piloting helped in refining the questions further and changes were made to the questionnaire in terms of language clarity.

Table 3.4: Summary of Instruments Utilized in the Study.

	Student motivation for the Web site	***Student motivation for the course***	***Student perceptions***
Instrument	Instructional Materials Motivation Survey (IMMS)	Course Interest Survey (CIS)	Perception and Principles Questionnaire
Type of data gathered	Quantitative	Quantitative	Quantitative and Qualitative
Question types	33 Likert type questions	34 Likert type questions	43 questions, 3 open-ended, 4 demographic

All three of the questionnaires were checked by five doctoral students and three experts for clarity of the paraphrased items. The misunderstood items or words were revised and checked again. The Perception and Principles Questionnaire was piloted with 30 students in CEIT department at METU, and the reliability of the instrument was found as .72 in total scale. The instrument (Appendix G) was administrated applied to CEIT 114 students at the end of the semester. The Perception and Principles Questionnaire was sent as an e-mail attachment to all students who were encouraged to respond within a week. After a week, the students were reminded to complete the questionnaire.

3.6.3. Interviews

In order to better understand the participants' experiences, face-to-face "in-person interviews" were conducted (Johnson & Christensen, 1994). Interview questions intended to capture more individualized and detailed perceptions of students about their learning. Interviews provided a second form of data collection in this study, a standardized open-ended interview approach was implemented (Patton, 1990). In this method of interviewing, the exact wording and sequence of questions were determined in advance. In these types of interviews the interviewer can elicit certain data from all participants while permitting the rest of the interview

to proceed in a more free-flowing form (Merriam, 1998). To ensure reliability, the participants were asked the same questions in the same order.

The interviews took place at the end of the semester. Questions were created based on the experience gained during the pilot interviews. After writing the interview questions, five experts checked the items (See Appendix H for interview questions). These questions were next tested as a think-aloud activity to check the clarity of the questions and receive feedback from three target students. These tests increased the credibility of the research. The interviewed students were selected purposefully. Four of the students selected were active in face-to-face sessions but not in the online environment; four others were active online but not face-to-face; four were active in both online and face-to-face sessions; and two were the students who were least active in both environments. This purposeful sampling meets guidelines established by Patton (1990), who explains that subjects should be selected based on specific characteristics or a determined property. Before each interview the students were informed about the purpose of the interview, and all of the interviews were audiotaped with the consent of the subjects. The students were also told that the interviews would not affect their grades in the course or affect the instructor's attitudes towards them. The interviews were conducted face-to-face, and each interview lasted approximately 20 minutes. All the interviews videotaped with participants' permission for an easy transcription.

3.6.4. Forum Transcripts

The forum transcripts included any messages that were written by the students or instructor on the asynchronous discussion forum. As data, these transcripts offer important advantages. Because they were captured digitally and completely in real time settings, they present an opportunity to study a phenomenon in a purely natural setting. New forum subjects were posted weekly (or every 10 days), and the discussions continued around the focused topic of the week. The transcripts can be in the form of questions, answers, suggestions,

statements. During the semester, the researcher took notes about the online interactions, read all the posted messages, and responded to participants' posts. Posted messages were printed and organized regularly based on the quality of content.

3.6.5. Field Notes

The researcher monitored student interactions in both online and face-to-face environments and took notes because "data collection is about asking, watching, and reviewing" (Merriam, 1998, p. 69). All of the collected information and analysis occurred throughout the courses, considering that "data collection and analysis is a simultaneous activity in qualitative research (Merriam, 1998, p. 151) and because this provided a qualitative component to the study's mixed method approach. As participant-as-observer, the researcher kept a diary and took notes during both the face-to-face lectures and online activities. This diary included observations about student's activities in both environments, notes about their behaviors, observations on their approaches to issues, and my own feelings about particular events, unusual or coincidental occasions, and routine observations related to the blended course environment.

3.7. Data Analysis

Data analysis is the process of systematically arranging interview transcripts and other qualitative documents, making statistical analysis regarding the quantitative data, and presenting the findings to others. Utilizing a triangulation mixed method data analysis, the qualitative and quantitative portions of the study occurred at approximately the same time, and both parts were combined after all types of data were gathered and analyzed (Johnson & Christensen, 2004). Throughout the study, qualitative data were analyzed through "content analysis" (Tashakkori & Teddlie, 1998, p. 128), and quantitative data were analyzed using descriptive statistics. In data analysis and interpretation process the qualitative results compared with statistical findings gathered from quantitative data collection

(Cresswell, 2005). That means the two sourses of data compared to determine if the qualitative data results supported the statistical results.

Qualitative analysis involved reading and organizing data, breaking them into manageable units, synthesizing, searching for patterns, discovering what is important, and deciding what to present and tell others (Bogdan & Biklen, 1998). The qualitative data included interview transcripts, asynchronous forum transcripts, open-ended question answers, instructor's diary and related course documents. The researcher maintained and printed the documents. The printed versions of the interviews, forum transcripts, and open-ended questions' answers were read and reread several times about the perceptions of students in the blended learning environment as well as for keys for motivational appeal. In the study "priori codes" were used already developed before examining the data (Johnson & Christensen, 2004, p. 508). Seven good teaching principles, also usability and design were used as the priori codes in the study. As suggested by Johnson and Christensen (2004) although it was started by priori codes, new codes (instructor role, motivation, attention, relevance, confidence, satisfaction, asynchronous and synchronous discussion) generated in the study. Thus responses which did not fit within the categories were separately coded and grouped. Then categories and subcategories were arranged, and each unit was marked with the appropriate category and subcategories. At this step, peer review (Johnson & Christensen, 2004, p. 250) strategy was applied, and the themes were coded and checked by two different researchers for interpretations and insights. The instructor diary and related course documents provided additional and supportive data for the recognized categories. For the coding agreement between peers, statistical measurements were calculated. Fleiss' kappa (κ) enables to find out the measurement of agreement when the number of raters is more than two (Fleiss, 1971). Thus Fleiss' kappa was calculated for assessing the reliability of agreement between the three raters (the researcher and two others). Fleiss' kappa value was calculated as $\kappa = .937$, and $SE(\kappa) = .032$. The measures calculates that the raters are in more agreement when $\kappa=1$ and no agreement when κ equal or nearer to 0. The calculated value ($\kappa = .937$) is nearer to

1 thus there is a good strength of agreement (see Appendix I for main codes reviewed by three reviewers).

The quantitative component included questionnaire data that were analyzed statistically by coding the answers. First, the data were transferred to a digital environment and edited. Data were then analyzed using the statistical analysis software, SPSS. Because the research questions involved learners' perceptions in relation to a blended course guided by GPP, the learner motivation level in the blended course was aligned with components of ARCS or learner motivation towards the course Web site; descriptive statistics were calculated frequencies, percentages, means, standard deviations, and frequency tables of the questionnaire items. For the question about the relationship between perceptions and level of motivation, the researcher computed the Pearson Product-Moment correlation coefficient. The sample size (N=47) was acceptable for the correlational study as it is mostly considered to be no less than 30 to provide meaningful results (Fraenkel & Wallen, 1996). Pearson Correlation analyses indicated the relationships between variables. There are three types of research studies in computing Pearson correlations: studies with (a) a correlation between two variables, (b) correlations among three or more variables, and (c) correlations within and between sets of variables (Green, Salkind, & Akey, 2000, p. 234). The third type was computed in this research, as one set of data had eight types of records and the other set, five.

3.8. Reliability and Validity Issues

The literature on both qualitative and quantitative research stresses the importance of ensuring reliability and validity in the studies (Merriam, 1998; Tashakkori & Teddlie, 1998; Creswell, 2003). Johnson and Christensen (2004) point out, "Mixed researchers are in a position to introduce more rigor into their studies than those who conduct monomethod studies" and add that these researchers "can be more confident about the validity of their findings" (p. 426). Being a mixed method research, both qualitative and quantitative validity and reliability strategies were considered in the study. Thus different methods were

combined in order to ensure validity and reliability. The details for the strategies used in this study is described below and also see Figure 3.5. for the summary.

One of the important validity threads in a research is *researcher bias*. Qualitative researchers usually ask whether the researcher's role and status is described in the study. Although researcher's role was described in the previous sections, here the bias will be explored and the questions about what was done to prevent researcher bias will be answered. Gillham (2000) points out that all research instruments have some effects on findings and because the researcher is the research instrument in qualitative data collection, the effects must be considered. Researcher bias is defined as "obtaining results consistent with what the researcher wants to find" (Johnson & Christensen, 2004, p. 249); the researcher should have self awareness of potential biases in order to control them. In this study, the researcher was the instructor of the course as well, adding to potential bias. By introducing more participants in course development, implementation, data collection, data analysis, and interpretation, the researcher tried to minimize bias. The researcher informed the research committee members in all steps of the study. In addition, she get three more researchers' ideas and in her implementation process. One other researcher collected the research data other than the researcher for to prevent participants', being effected from their instructor. Furthermore in the qualitative data analysis process two other researchers took an active role in analyzing the data. No one is totally objective, and every person is influenced by past experiences, but as a researcher, instructor, and whole participant of the teaching-learning process, she took potential biases into account during the entire process. Gillham (2000) suggests that a researcher must "make a consistent effort to observe yourself and the effects you might be having" (p. 47). Taking a participant-as-observer (Johnson & Christensen, 2004) role is another way to handle researcher bias. Although the researcher was teaching, observing, and collecting field notes, she also informed the students that they were in a study and requested their permission to conduct and record the data. This behavior defined her to be as a participant-observer and prevented some bias.

Table 3.5 The Reliability and Validity Criteria List for the Study

Strategy	*Criteria*	*Application*
Validity	Researcher bias	▪ Researcher's role and status is described accordingly. The researcher made self-reflection critically for her potential biases in the study (reflexivity). ▪ Research committee members were informed in each step of the study and more researchers' ideas were got in all steps. ▪ Different researchers took roles in data collection process. ▪ The researcher took a participant-as-observer role in the study. ▪ The results of the study were compared with the literature in the chapter 5.
	Member checking	▪ Participants reviewed the interview questions and questionnaire items to ensure the same meaning to express. ▪ Interviewed participants reviewed the accuracy of transcriptions of the interviews.
	Peer review	▪ Interpretations and conclusions of data were reviewed by peers, advisor, and co-advisor of the study. ▪ Qualitative data was examined by different raters.
	Triangulation	▪ Multiple data sources used to cross-validate the findings (data triangulation). ▪ Multiple research methods used (methods triangulation). ▪ Multiple researchers involved in collecting, analyzing and interpreting data (investigator triangulation).
Reliability	Peer review	▪ Interpretations and conclusions of data were reviewed by peers, advisor, and co-advisor of the study. ▪ Measurement of agreement calculated for qualitative data and discussed by peers (intercoder reliability)
	Reliable transcribe	▪ Audio transcripts had listened by multiple listeners. ▪ Forum transcripts were re-read by multiple researchers. ▪ Tapes/transcripts open to inspection by others.
	Evaluation	▪ The synthesized data discussed by the researcher, advisor and co-advisor of the study for a common understanding.
	Triangulation	▪ By combining multiple research methods, better evidence tried to be gathered in the study (methodology triangulation). ▪ The research methodology is fully described.

Triangulation

Triangulation is usually defined as a method that uses multiple sources of data to establish trustworthiness in a study. Johnson & Christensen (2004) point on the importance of using triangulation techniques for increasing the credibility of mixed data. Denzin and Lincoln (1994) explain, "The use of multiple methods or triangulation reflects an attempt to secure an in-depth understanding of the phenomenon in question" (p. 2). According to Merriam (1998), triangulation consists of using multiple sources of data, multiple investigators, and multiple methods to confirm emerging findings.

Data triangulation forces the researcher to "cross-validate and corroborate findings" (Johnson & Christensen, 2004, p. 426), and in this study, data triangulation was ensured by acquiring multiple sets of data via different techniques such as questionnaires, interviews, and documents. As Patton (1990) suggests, the researcher needs to use "different data sources to validate and cross-check findings" (p. 244). Morever, Fraenkel and Wallen indicate, "When a conclusion is supported by data collected from a number of different instruments, its validity is thereby enhanced and it is often referred to as triangulation" (1996, p. 461).

Investigator triangulation was ensured by involving multiple investigators, committee members and other Ph.D. students in the same department, in the development and validity checking of the questionnaires, data collection, and most importantly analysis and interpretation processes, as well as by referring to different references and theories in the study development, data interpretation, and writing processes. The researcher was in frequent contact with two Ph.D. students in the same department during all course development and implementation procedures. In the data collection process, these students were also active participants. One of these Ph.D. students observed all online course activities and cross-checked the researcher's notes throughout the semester. Analysis of the qualitative data was also cross-checked by one of these investigators. As explained,

Fleiss' kappa calculated to find the measurement of agreement between the raters for inter-rater reliability and the value $\kappa = .937$ calculated a high agreement between three raters. Method triangulation was ensured by using both qualitative and quantitative research methods. According to Johnson and Christensen, "When mixing data and methods, you should use the fundamental principle of mixed research" (2004, p. 426), and by being a mixed method research this study naturally provided method triangulation.

3.9. Limitations and Delimitations of the Study

The proposed study was conducted under the following limitations and delimitations:

- One of the limitations involves the number of participants in the study. Because this was a study to provide a detailed account of a small context (Johnson & Christensen, 2004), it was limited to the students enrolled in the CEIT 114 course in the 2005-2006 spring semester; thus the research conclusions cannot be generalized beyond the context of the original study. However, the information from the study may be valuable to course instructors or institutions with a similar idea of designing blended learning environments. As indicated by Johnson & Christensen (2004), other organizations might be able to learn from the information gathered.
- The researcher is a Ph.D. candidate in the instructional technology department who gave the course. Because Ph.D. studies are geared to an individual, the researcher performed the data collection and analysis process alone. As the researcher was also the instructor of the course, she asked for other researchers' ideas throughout the process. Additionally she avoided being in the center of data collection by getting help from other researchers from the same department.
- The ideas of learners examined in this study were limited to the particular blended course in which the preservice teachers were enrolled in CEIT department and 2005-2006 spring semester.

- The study is delimited by the questionnaires used in the study. The instruments developed by other researchers, reviewed and used many times in other studies.
- Validity of this study is limited to the reliability of the instruments and the quality of the data collection process, and results are limited to the honesty of the students' responses to the instruments used in this study.

CHAPTER 4

RESULTS

The purpose of this study is mainly investigating the students' perceptions and motivations of their learning in the blended course. In the research design of the study a triangulation mixed method approach was used involving more than one methods in this single study, and also collecting and analyzing quantitative and qualitative data. Through questionnaires, interview, and course related documents, a large amount of data was gathered and analyzed for understanding student perceptions and measuring motivation. In this chapter the findings of the study is presented concerning the research questions.

4.1. Demographic Summary

Learning about the general information about the participants is important to understand the overall picture of the study and also might affect the results. Thus, some descriptive information was collected about students' age, gender, and school of graduation, Internet access and their preferences of taking the course by determined questions. In the study, a total of 47 participants returned three of the questionnaires. The study population comprised of 30 (63.8%) males and 17

(36.2%) females with a total of 47 (100%) CEIT students. In the study the majority of the participants' ages were between the ages of 19 to 21 (Table 4.1).

Table 4.1 Frequencies of Participants Concerning their Ages

Age	17	19	20	21	22	24	25	28
Number of participants	2	8	19	10	4	1	2	1

In one other question, students were asked about where they mostly access the Internet. This was asked regarding the result might affect their availability to the online part of the blended course. The Internet access points were determined as home, school, dormitory, Internet cafe, and friend's computers (see Table 4.2). Most of the students rated home computers as the most preferred Internet access point. Results revealed each student access the Internet from school several times and it was most of the students second preferred access point after home computers. Dormitory is the third order Internet access point selected by students. 16 students expressed that they never access Internet from dormitory with the reason they do not stay there. 7 students pointed they access the Internet from their friend's computer as their first preference and only 2 students preferred to access the Internet from Internet cafes for first preference. Results showed most of the students generally accessed the Internet from the university or their homes.

Table 4.2 Participants' Internet Access Points

Internet Access Points	**Preference order**					
	Never	**1st**	**2nd**	**3rd**	**4th**	**5th**
School	-	21	24	2	-	-
Home Computer	11	26	10	-	-	-
Dormitory	16	15	16	-	-	-
Friend's Computer	18	7	11	5	5	-
Internet Cafe	40	2	2	3	-	-

Information of students' school of graduation was requested on the survey regarding the results might affect their thoughts of the blended course because students in vocational schools are mostly accustomed to use computer and internet technologies in their high school courses and results are summarized in Table 4.3. Majority of the students were graduated from a vocational-teacher training school (48.9%) and this was followed by vocational-technical school (27.7%). Anatolian-science (8.5%), state (2.1%) were the least rated schools. And five other students responded that they graduated from other type of schools (10.6) explaining that they were international students.

Table 4.3 Statistics of the High School Types of Graduation

School of Graduation	***f***	**%**
State High School	1	2.1
Anatolian/Science	4	8.5
Vocational (Technical)	13	27.7
Vocational (Teacher Training)	23	48.9
Others	5	10.6
Total	47	100

4.2. Learners' Perceptions in the Blended Course (Research Question 1)

This section firstly focused on the findings related to students' perceptions about the blended course. The results summarized under each of the Good Teaching Principles in relation with the research questions. In order to get student's perceptions in relation to blended course guided by GPP, Student Perceptions and Principles Questionnaire and face-to-face interviews were applied. Furthermore forum transcripts and instructor notes were other data sources that helped to reveal how students perceived blended environment.

In the Perception and Principles Questionnaire the learners rated their perceptions under nine main categories, seven of these related to GPP. The categories were student-faculty contact, cooperation, active learning, feedback, time on task, expectations, respects diverse talents and ways of learning – related to GPP – and two more; design, and usability of the course. Respondents rated their

levels of agreement with the statements of seven principles categories questions by using a scale 5 indicating "Very Often", 4 indicating "Often", 3 indicating "Sometimes", 2 indicating "Rarely", 1 indicating "Never" and 0 indicating "Not Applicable". For the other two categories, design and usability of the course; students rated their levels of agreement with the statements by using a five-point scale, 5 indicating "Very Much Help", 4 indicating "Much Help", 3 indicating "Moderate Help", 2 indicating "A Little Help", and 1 indicating "No Help". Perception and Principles Questionnaire included a total of 23 items related to the GPP. Additionally 21 additional questions were about the categories of "Instructional Design" and "Usability of the Course" which are important in getting student ideas in a learning environment. These questions were not added into the score of the GPP items. They were used as a part of the additional categories important to get results of the learners' overall perceptions through the designed blended environment.

Table 4.4 Statistics of the Perception and Principles Questionnaire

Sub-Scales	Number of Items	M	SD
(P1) Student-Faculty Contact	5	4.01	.51
(P2) Cooperation	3	3.92	.63
(P5) Time on Task	3	3.90	.63
(P7) Respect Diverse Talents and Ways of Learning	3	3.78	.76
(P4) Feedback	3	3.59	.94
(P3) Active Learning	4	3.49	.82
(P6) Expectations	1	2.96	1.33
Design	10	3.92	.57
Usability of the Course	11	3.72	.70
Overall mean (GPP)	**23**	**3.97**	
Overall mean (perception)	**44**	**3.70**	

Table 4.4 shows the mean and standard deviations of the each subgroup in the Perceptions and Principles Questionnaire. For the "Student-Faculty Contact" subscale the results indicated that majority of the participants have positive

perceptions (M=4.01). Results showed that "Cooperation" (M=3.98) was the second sub-scale between the GPP that students perceived positively. "Time on Task" (M=3.90), "Respects Diverse Talents and Ways of Learning" (M=3.80), "Feedback" (M=3.61) and "Active Learning" (M=3.56) were the following factors perceived positively as indicated by students. The lowest mean score was for the principles of "Expectations" (M=2.96). The other subscales "Design" (M=3.94) and "Usability of the Course" (M=3.70) were the positively perceived other principles other than GPP in the blended course as indicated "Often" level by the students. Results showed that all other categories' mean scores were upper than the total mean scores except the principles of "Active Learning", "Feedback", and "Expectations". But except "Expectation" principle, other mean scores had close ratings to the total mean score.

4.2.1. The Principle of "Student-Faculty Contact"

The first subscale of the GPP is about the Student-Faculty Contact in the course. Means, percentages and number of responses of the respondents are reported in Table 4.5. There were five items in this subscale and the mean score was found (M=4.01) indicating "Often". This means the majority of the respondents perceived the blended course supported by activities that helped to have a contact between each other and the faculty.

For the item of "My instructor is available for assistance throughout the course (electronic office hours, e-mail, discussion rooms)" the majority (97.9%, M=4.51) of the students perceived that the instructor was in appropriate condition to help them during the process that they are taking the course. Two other items about the instructor "served as a mentor/advisor" (83.0%, M=4.10) and "shared his/her past experiences with me" (76.6%, M=4.00) were the statements students responded that was very oftenly or oftenly. It can be implied that majority of the participants believe the instructor's behaviors were supportive and supported them with own experiences. In one other item students were asked if "instructor provides guidance and information is dealing with technical problems or concerns related to

the course" (68.1%, M=3.94). Although most of the respondents perceived the instructor very oftenly or oftenly helped with technical problems, 25.5% of the students perceived the instructor "Sometimes" interested on this issue. "My instructor encourages me to attend professional meetings and events in my field" (44.7%, M=3.46) was the only item in the subscale that less then half of the students perceived "Very Often" or "Often". 17.0% of the students perceived that encouraging to professional events was not the issue in the course.

Table 4.5 Distribution of the Responses in the Principle of "Student-Faculty Contact"

Statements	% respondents						M	SD
	Very often	Often	Sometimes	Rarely	Never	Not included		
My instructor is available for assistance throughout the course (electronic office hours, e-mail, discussion rooms).	55.3 (26)	42.6 (20)	0 (0)	2.1 (1)	0 (0)	0 (0)	4.51	.62
My instructor served as a mentor/advisor.	29.8 (14)	53.2 (25)	17.0 (8)	0 (0)	0 (0)	0 (0)	4.10	.68
My instructor shared his/her past experiences with me.	27.7 (13)	48.9 (23)	19.1 (9)	4.3 (2)	0 (0)	0 (0)	4.00	.81
My instructor provides guidance and information is dealing with technical problems or concerns related to the course.	27.7 (13)	40.4 (19)	25.5 (12)	4.3 (2)	2.1 (1)	0 (0)	3.94	.85
My instructor encourages me to attend professional meetings and events in my field.	14.9 (7)	29.8 (14)	23.4 (11)	8.5 (4)	6.4 (3)	17.0 (8)	3.46	1.14
Overall Mean Score							**4.01**	

In addition to aforementioned, the interview results were in line with the questionnaire ratings. During the interviewing students pointed on the effect of online environment for their communication. The students agreed that Web components of the blended course enhanced the communication with others in face-to-face sessions as well as online part of the course. Five of the participants

emphasized on the importance of e-mail for having contact between the instructor and their classmates. Additionally all of the interviewed students pointed on asynchronous forum's potential that promoted communication during the whole week time. Also students pointed on having easy access to all of the course related documents, instructor's and others' communication addresses such as course assistants, mentor teachers, and classmates; and detailed course related information by the online Web support.

One of the students said:

> When I access the Internet, I had the habit to enter the course Web site. I am looking because I am curious that who send a reply, what is happening, or did anyone send a reply to my post. If there is not a Web site, we could not contact with each other in a seven day time. Maybe we see each other in other lessons but we do not talk about this course. Then, we only have a course once a week and then, we do not think on the course until the next week.

About the easy access of all the course materials, one of the students expressed:

> By the blended design of the course, I have access to everything related to the course and anytime. This is so comfortable. I can reach whatever I want and this was favorable.

In one of the interview questions students' ideas were asked about what they mostly liked about the course and six of the students answered:

> Having a good contact opportunity throughout the semester process was very good for me. During the semester, three times, I asked some questions by e-mail to the instructor and she answered in the same day. Getting quick answer felt me that the instructor is really in relation with us and the course. Office hours are not adequate for having contact with the instructors, because usually I cannot find them in their offices. E-mail contact is very comfortable. I do not need to come to the department and instructor's office☺.

One of the interesting comments was about having a habit of entering other course Web pages, while using this course Web site actively. The student expressed:

> I entered CEIT 114 course Web site minimum once in a day. Because every time there was a movement. Instructor may send news; my friends may send posts on the forum or reply my message. Because I am entering this course Web site each day, I started to enter the other course Web site [they explained that they have a course supported with a learning management system] also. That means, I am accustomed of following the other course Web pages by using this one.

Additionally interviewed students talked about the interaction between each other in a crowded classroom. One interviewee's answer was interesting that he explained the asynchronous online sessions made them having more close relationship with the classmates. Also he added that he was giving priority to close friends while responding the posts of others:

> We were exactly fifty students in the CEIT 114 class. Having a contact with others is not easy in the face-to-face course. Also, sometimes you could not contact in the classroom because it is crowded. During the [asynchronous] online discussions I feel myself closer to my friends. I can easily comment on my friends' posts. Also I familiarize with some of the people in the classroom during forum discussions that I am not so close before. Additionally I feel that it is interesting to see my close friends' ideas there and then commenting their posts. I usually give priority in responding their posts.

One other issue was about instructor contact with students whom not seen or active in asynchronous discussions or face-to-face classes for a while. Three interviewees commented that they liked of being noticed by the instructor. One student said:

> I was usually an active participant of forum discussions. But in two weeks time, I could not follow the discussions in reason for not having Internet access in my new house. I get an e-mail from the course instructor about why I was not attending the discussions. I was stunned of being noticed by my instructor but

it was supportive for me. I like this and also shared this experience with my close friends in class.

Interviews and forum transcripts revealed that students liked instructor's support in their learning and the Web environment facilitated this. But most of the complaints were about not getting enough technical support. Quantitative results also revealed that some of the students were not pleased with this issue.

4.2.2. The Principle of "Cooperation"

The "Cooperation" subscale had three items and the total mean score was found (M=3.92). Means, percentages and number of responses of the respondents are provided in Table 4.6. The finding revealed that the students' perceptions were mostly positive which means that they agreed cooperative activities supported in the blended course.

Table 4.6 Distribution of the Responses in the Principle of "Cooperation"

Statements	% respondents						M	SD
	Very often	Often	Sometimes	Rarely	Never	Not included		
My instructor encouraged me to discuss key concepts with other students whose backgrounds and viewpoints are different from my own.	31.9 (15)	48.9 (23)	12.8 (6)	2.1 (1)	0 (0)	4.3 (2)	4.16	.74
I was asked to give opinions, reactions, opposing views, and/or thoughts regarding other students work.	19.1 (9)	31.9 (15)	36.2 (17)	2.1 (1)	0 (0)	10.6 (5)	3.84	1.13
The instructor encouraged me to collaborate on projects, and form a learning community and/or workgroup.	29.8 (14)	38.3 (18)	17.0 (8)	4.3 (2)	6.4 (3)	4.3 (2)	3.76	.82
Overall Mean Score							**3.92**	

In the item of "My instructor encouraged me to discuss key concepts with other students whose backgrounds and viewpoints are different from my own" (80.8%, M=4.16), majority of the students perceived that it was encouraged to

discuss with others. Students were asked about the given opportunities on others' work by the item "I was asked to give opinions, reactions, opposing views, and/or thoughts regarding other students work" (51.0%, M=3.84). Half of the respondents perceptions were on the level of "Most Often" or "Often" and 36.2% (N=17) of the respondents answers were on "Sometimes" level. Although most of the students perceived the statement positively, 10.6% (N=5) of the students believed the statement not included in the class. In other item students posed whether "The instructor encouraged me to collaborate on projects, and form a learning community and/or workgroup" (68.1%, M=3.76). More than half of the students perceived most oftenly of oftenly they encouraged.

In relation to the quantitative results, in the interviews almost all students stated that their perceptions are positive in relation to cooperation in the blended course. Students were able to work in groups of three or four people while they are going to observation schools. Students stated they liked working together related to observation school issues.

One student explained:

> After we made firsthand observations [in observation schools] we were discussing about them with my friend. For example the teacher is behaving like that on the sample event, if I was the teacher, I behave like this and my friend say he behave in another way also. But the teacher behaves in different way in the classroom and we observe that... Sharing opinions with each other was effective and helped in writing the observation reports.

More than half of the interviewees pointed on knowledge sharing and all interviewees focused on the benefits of having discussions both in face-to-face sessions and online forum. Students stated that as well as each of the students has different experiences, thus sharing them on a discussion platform makes their ideas enriching. One interviewed student explained her ideas:

> ... Our previous experiences as we get by being a student and new experiences as a prospective teacher are all important here [in discussions]. During the discussions in asynchronous forum,

> we get the opportunity to see different expressions; we share these [experiences]. Of course there are opposite views and usually we are trying to come to a common point. Because there are alternative ideas proposed by my friends, I think that they may also be true and sometimes accept one of those ideas at the end.

One other student's ideas were interesting about knowledge sharing:

> There is a kind of knowledge sharing during discussions. There are different experiences and personal information that we have, and during discussions we display them. For example one of my friends share her ideas that I did not think anymore and hearing that idea is very interesting.

Some of the expressions got from forum transcripts support interviews and quantitative findings that students cooperated by commenting their classmates and/or learned from others. These are some quotations from student posts in forum:

> The benefits of blended environments are apparent. But what Fulya [one of the students in the classroom] pointed is wonderful I think. So simple but very important point.

> As far as I read from my friends' opinions the blended environment is very useful for students to learn... I want to add one more thing.

> I am not on the side of Feyza's [one of the students in the classroom] ideas because I believe the student who can be able to learn himself instead of going to school is so rare...

These quotations revealed students commented friend's post in forum although they agree the ideas or not, or want to add another point, or like the ideas etc. One of the interviewees expressed his positive perceptions about online asynchronous discussions and suggested a more wide cooperation:

> The asynchronous online discussions may be open to the other classes and departments. For example they are seniors and they have more experiences than we have, thus they may share their experiences with others.... Experience is always important for giving ideas to beginners.

Also students touched the points that the face-to-face class activities and observation hour process were more supported in regard to collaborative activities however online activities were not supported much in terms of collaboration.

4.2.3. The Principle of "Active Learning"

Four items in the questionnaire inquired the students' perceptions about "Active Learning" principle. Means, percentages and number of responses of the respondents are provided in Table 4.7. The results indicated that "Active learning" principle (M=3.49) is one of the subgroups that has a lower mean than the total mean score of all the principles (M=3.69).

Table 4.7 Distribution of the Responses in the Principle of "Active Learning"

Statements	% respondents						M	SD
	Very often	Often	Sometimes	Rarely	Never	Not included		
The instructor encouraged me to relate personal and professional events and activities to the course subjects.	38.3 (18)	27.7 (13)	23.4 (11)	8.5 (4)	2.1 (1)	0 (0)	3.92	1.09
I take the responsibility for my own learning.	23.4 (11)	42.6 (20)	19.1 (9)	6.4 (3)	0 (0)	8.5 (4)	3.91	.87
It was asked me to undertake research or an independent study project.	14.9 (7)	21.3 (10)	25.5 (12)	6.4 (3)	17.0 (8)	14.9 (7)	3.13	1.20
It was encouraged me to suggest new readings, research projects, field trips, or other course activities.	10.6 (5)	19.1 (9)	34.0 (16)	14.9 (7)	12.8 (6)	8.5 (4)	3.00	1.20
Overall Mean Score							**3.92**	

In the two items of the "Active Learning" subscale "I take the responsibility for my own learning" (66.0%, M=3.91) and "It was encouraged me to relate personal and professional events and activities to the course subjects" (66.0%, M=3.92) the results indicated that majority of the students perceived the blended

course supported active learning in relation to the opportunities given them to have their own responsibilities and relating personal and social events. That means student perceptions are mostly positive in relation to activeness in their own learning by being responsible of it. On the other hand, with the items "It was asked me to undertake research or an independent study project" (36.2%, M=3.13) and "It was encouraged me to suggest new readings, research projects, field trips, or other course activities" (29.7%, M=3.00), less than half of the students perceptions were on the level of "Very Often" or "Often". 17.0% of the students perceived that "Never" wanted them to take a part in an independent study in that blended course and 14.9% answered the question in "Not Included" level and perceived this was not an issue in the course. In the question asking about whether students were encouraged about new projects, readings, trips etc. only %29.7 of them perceived as very oftenly or oftenly. On the other hand, 12.8% perceived it was "Never" and 8.5% answered "Not Included". Thus, questionnaire results revealed that students were not in agreement about making them active by asking their suggestions of different course activities.

The qualitative results were mostly positive in relation to active learning and most of the students pointed that communication tools supported their activeness in the course process. Five participants stated that having meaningful discussion in face-to-face sessions, then carrying on these discussions in asynchronous environment or vice versa promoted their learning and attracted more attention. One interviewee's expressions supported this idea is given below:

> We discussed on our discussion topic in the face-to-face classroom. Then we continue this discussion in asynchronous online environment to detail it further. After the face-to-face class I make some research about what we discussed. Because that attract my attention. During my little research, I learn new things and then I share them with my friends in forum.

Having discussions on real world situations - ill-structured scenarios - was another issue which students stated that allowed them more active. All of the interviewed students pointed on the attractiveness and effect of working on real life

situations instead of only talking on theoretical basis. One interviewee supported this idea:

> Working on real cases attracted my attention more to the course. Because they are about what we face off in our daily lives, parallel to our firsthand observations or life... If there was a classic question, then the instructor only asks the question and waits for the answer. But scenarios made us thinking sometimes made research about what was asked, and provided us having more meaningful and easily-remembered discussions...

Two other interviewees' ideas were interesting that both make a connection between scenarios, their own life and future job:

> Scenarios are the real events that we will face off in our future profession. So they were perfect.

> What I like in scenarios was they were about Pınar's [the student's name in the scenarios] life. But her experiences and life is what we also live in these days. I feel that she is a student in our class not an outsider. For example in one scenario, I read Pınar's situation by laughing☺. It was writing one month passed from the day that the observations get started, Pınar's observation school was far away and she was complaining about that...That was me ☺.

Six of the interviewed students pointed on permanency of their ideas in the written document while they are writing in the asynchronous forum. The stability of the written ideas makes them having more investigation before expressing their ideas in forum. The students also expressed these helped having more personal discussions and being more active during the discussions. And also three of the interviewed students expressed that real-life scenarios make them being more responsible of their ideas because they are not getting the responses from a resource or somewhere, instead expressing all their own ideas.

One student commented on these issues:

> Before expressing my ideas about the discussion scenarios, I needed to think. Because they were my own ideas that I wanted to share with my friends by writing and of course this gave me a

> responsibility. The scenario questions were not something that we might find the real answer from a book and adapt it. Also I belive that writing is always a bit more risky than saying ideas in a classroom dicussion because it is stable. I need to say scenarios make me thinking instead of just trying to memorize the information that the instructor is presenting and I feel that I'm an active participant of the class.

During the asynchronous discussion process, students suggested different readings or other sources to the classmates that they found interesting and relevant about the subject area. This allowed students being active by selecting and deciding relevant resources about the subject matter. There were many examples during the forum discussions that students suggested readings or references to each other. Some messages posted by students:

> Wikipedia's definition is very good about our subject matter. Please check www.wikipedia.org

> These are my ideas. For more details please check www.trainingshare .com or Dr. Eyupoglu's article in TBD. For online access: http://dergi.tbd.org.tr

> ... I get all my writings from Russell T. Osguthorpe and Charles R. Graham's article Blended learning environments: Definitions and directions. Please check it and then we may discuss on some issues.

> Friends, I found an article all responding our questions. I attached the article to my post. In my opinion, everyone should read this article!

> I wrote my comments from the books I get from the university library. In our next lecture, I am going to bring them to our class. We all need to check the items; they are so related to our subject.

In relevance to these comments, one student stressed on a good issue in one of the forum discussions that he mentioned students could reach to references that they were not knowledgeable about some of them. He commented:

> Reading the asynchronous forum comments were enriching that provide us getting different points of view and also we get the

> articles, books or some other references that we did not find or know before. And this makes us reading and investigating more.

One other activity mentioned was video clips that encouraged active learning. Small video clips were integrated in the face-to-face lectures to discuss on the real problems in demonstrations by believing the strength of video clips help to produce an active and participatory learning. Students agreed that working on small and real video clips were encouraging, and increased their desire to say their ideas. Thus video clips helped them being more active, and all interviewees pointed the video clips helped to be more focused on the discussion topics. They agreed that they liked having discussions related to video clips. Two interviewees' comments were:

> I like the video clips that had shown in face-to-face lectures. They were captured from real classrooms. I think these demonstrations make our discussions more focused.

> I learn better if I see instead of talking on imaginary issues. The video clips we watched in our lessons were encouraging that we see what is happening and than we discussed what is right or wrong. By the way we focused on the problem. Also I feel that I surely need to say my ideas, thus I was more active in video-related discussions.

4.2.4. The Principle of "Feedback"

Three items in the questionnaire inquired the students' perceptions about "Feedback" of GPP. Means, percentages and number of responses of the students are provided in Table 4.8. The results indicated majority of the students perceptions are on the level of "Often" (M=3.59) in relation to feedback gathered in the blended course.

When each of the items investigated, the results showed that majority of the students have positive perceptions in the questions "I received timely feedback from the instructor" (70.2%, M=3.89) and "The feedback was valuable, relevant, and helpful" (72.4%, M=3.89) both indicating "Often" level. However, in the item of asking about feedback gathered from classmates "I received timely feedback

from the other students" (M=2.98), the students' perceptions were on the" Sometimes" level with a response rate of 27.7%. In addition a high percent of respondents perceptions were on "Never" (23.4%, M=2.98) level about getting feedback from other students. The results revealed that according to the students, feedback gathered from fellows was not adequate in terms of time.

Table 4.8 Distribution of the Responses in the Principle of "Feedback"

Statements	% respondents						M	SD
	Very often	Often	Sometimes	Rarely	Never	Not included		
I received timely feedback from the instructor.	29.8 (14)	40.4 (19)	12.8 (6)	10.6 (5)	2.1 (1)	4.3 (2)	3.89	1.05
The feedback was valuable, relevant, and helpful.	27.7 (13)	44.7 (21)	8.5 (4)	8.5 (4)	4.3 (2)	6.4 (3)	3.89	1.08
I received timely feedback from the other students.	14.9 (7)	21.3 (10)	27.7 (13)	6.4 (3)	23.4 (11)	6.4 (3)	2.98	1.41
Overall Mean Score							**3.59**	

The interviews revealed that, participants' understanding of feedback was mostly about instructor participation in the discussion process. All of the students commented positively on the instructor's participation in both asynchronous online and face-to-face discussions. They pointed on the supportive effect of instructor's attendance to the discussions. The major benefits of getting feedback during the discussions as indicated by the students:

> Getting feedback from the instructor make having more serious discussions...
>
> After getting feedback, I feel that "ooh ok, this is the issue, I have to think from this way again and write [to the forum] my new comments."

> When feedback is given as for example "one of your friends said this about the subject, the other commented like this, what do you think," it is more effective I feel. We are more activated by the feedbacks in the discussions, it is a kind of supportive pushing and students need to be pushed.
>
> If I get feedback to my homeworks and ideas, then I have a desire to attend more to the course and discussions. Other than this, I did not feel that I need to write something about the discussion topic [in the asynchronous discussions].
>
> Our instructor summarized each week's discussion topic at the end and I like reading this summary, because it is the small result of the whole.
>
> The participation of the instructor in the forum really encouraged me. The feedbacks and the reaction she does make me going on. I appreciate the fact that she reads carefully all the posts and gives feedbacks. Participating to the forum makes us consider our instructor more as a friend, than as a teacher.

According to the interview responses the students appreciated the instructor's feedback as relevant, valuable, supportive, criticizing, encouraging, improving and helpful. Their negative opinions were about the students' lack of giving/getting feedback to/from the other students' during the discussions as it is consistent with the quantitative results. It is revealed that all the interviewed students were willing to get others' comments. Two of the students complained that they had never had the experience of getting feedback from the classmates during the discussions. All other interviewed students' comments were about not getting good feedback from other class members. They explained that they get some feedback and shared ideas but these were not adequate. One interviewee said:

> What I like during the asynchronous discussions is getting comments to my ideas from both classmates and the instructor. This makes me thinking from the other ways and improves my ideas. Because one person's ideas are his rights. And I like looking from a third person's eyes, I mean getting comments, being criticized.

Additionally as seen in forum posts, some of the students tried to push others by writing different comments. Some of these comments are:

> These are my ideas, so they can be wrong, that is why I am looking to your responses.
>
> Hi all. The article that I attached my previous post is not opening if you are not saved to your computer. Please read the article and I will appreciate if you make comments on my ideas.
>
> Don't you think that she [Pınar, the student character in scenarios] is right my friends? Think, which of us get an online course before coming to university?
>
> These are all my comments my friends. You agree or not! But of course I will be happy of getting your opinions.

In the forum, one discussed issue was getting quick feedback by using the advantages of online support (e-mail, forum) in the blended course. One of the comments summarized this well:

> When there is a question that a student is interested or could not answer, then instead of keeping it in his mind for the following scheduled face-to-face lecture for example he may write in the forum and ask for other students to respond or directly e-mail to the instructor. This enables getting quick response.

One other student also mentioned on the importance of getting feedback and he also pointed about getting response to all unanswered questions by the online support, which they could not get in face-to-face environment:

> What I really like about the instructor was she always commented on our writings in forum environment within a few days… My interest increases and I learn better when I feel that somebody is following me. There was no question unanswered by the online support. In pure face-to-face lectures, time limits answering to many questions, and most of the time I do not ask although I want to.

One of the interviewed student's comments about giving feedback to others in asynchronous discussions was:

> Reading all the comments written in forum is already time consuming. Thus writing my comments after each idea and giving feedback would be more time consuming for me...

The interviewed student's idea shed light on the quantitative finding that getting timely feedback from the other students was low. One other pointed issue was about OMPs used in the blended course to get regular feedback from students. Most of the interviewed students pointed that they liked this application. Two students explained OMPs were nonsense and they could not understand what the instructor wanted to get by these two questions. Others positively commented that OMP questions resulted what they did not understand in that weeks discussion topic, what they were learning and liked the application.

Other than the discussions, during the observation hours in K12 schools, students were encouraged to work in pairs and groups and to give feedback of their activities in observation hours. All of the interviewed students responded that getting feedback about their observation hours from peers were valuable for their development. Some of the students had complains about feedback gathered from the course assistants. There were six assistants assigned for this course and especially students' complaints were about two about getting delayed feedback. Interviews and instructor observations revealed as the semester wore on, some of the course assistants did not give the required feedback on the due date and students' were not pleased from the situation.

4.2.5. The Principle of "Time on Task"

The fifth subscale of the GPP is "Time on Task" issue investigated in the blended course. Means, each level percentages and number of responses of the respondents are provided in Table 4.9. There were four items in this subscale and the mean score was found (M=3.90) indicating the level of "Often". The findings showed the overall mean of this group of items were at the "Often" level, which means that the majority of the respondents perceived the blended course emphasized to them the importance of using time wisely.

"The course expectations were clearly communicated at the beginning of the semester" (M=4.37) is the most highly rated item in the Principles and

Perceptions Questionnaire. With a high response rate (89.4%), the students most oftenly perceived that the objectives and requirements were determined at the beginning of the course and talked about them. Nearly half of the students perceived in" Often" level "to set challenging goals for my learning" (48.9%, M=3.55), but also 31.9% agreed that it was sometimes. And 59.6% most often and oftenly, an 29.8% respondents sometimes agreed that for the item of "to understand the importance of sound self-pacing and scheduling for the course" (M=3.74). Additionally more that half of the students perceived that in the item of "Assignments and projects were useful and relevant" (68.1%, M=3.92), the mean was calculated at the "Often" level.

Table 4.9 Distribution of the Responses in the Principle of "Time on Task"

Statements	% respondents						M	SD
	Very often	Often	Sometimes	Rarely	Never	Not included		
The course expectations were clearly communicated at the beginning of the semester.	46.8 (22)	42.6 (20)	6.4 (3)	2.1 (1)	0 (0)	2.1 (1)	4.37	.71
Assignments and projects were useful and relevant.	29.8 (14)	38.3 (18)	25.5 (12)	6.4 (3)	0 (0)	0 (0)	3.92	.90
The instructor helped me to understand the importance of sound self-pacing and scheduling for the course.	21.3 (10)	38.3 (18)	29.8 (14)	8.5 (4)	0 (0)	2.1 (1)	3.74	.91
The instructor helped me set challenging goals for my learning.	19.1 (9)	29.8 (14)	31.9 (15)	8.5 (4)	4.3 (2)	6.4 (3)	3.55	1.07
Overall Mean Score							**3.90**	

In addition to quantitative findings, almost all of the interviewed students agreed that in the blended course "time on task" principle enhanced through both online and face-to-face supports. Some of the ideas presented by different interviewees are:

> In face-to-face lectures, we need more and more time to get all students' ideas, minimum four or five hours. Additionally in face-to-face lectures, after some time, we got tired of listening and lost interest. Thus, having both environments is a good opportunity.
>
> Something that I did not think during the face-to-face lecture came into my mind after the lecture in time and I wrote my ideas in the forum.
>
> No other voice in forum, no noise during forum discussions, and no time limit. Sometimes during face-to-face discussions, there is noise in the back of the class and I cannot hear what is being discussed. As I explained before, sometimes there is something that I cannot hear during the face-to-face discussions. I can read them in asynchronous forum easily [the discussion subjects in face-to-face followed by asynchronous discussions in forum] and also I can send a comment.
>
> Before expressing my ideas during face-to-face lecture I usually check the time and if there is little time, then I feel that maybe now it not the right time to say something because the course is going to last a few minutes. I do not like to compress my ideas, this makes me nerves... but in online environment there is a freedom that everyone can freely share ideas how they want.

As seen from the above statements, the interviewed students connected the time issue usually with asynchronous discussions. All agreed that asynchronous discussions – technology – allowed them more time for thinking, discussing, expressing, writing and improvement of their understanding. During the asynchronous discussions, students expressed they could comment seven days of the week without time limitation; there is not a restricted time for discussions or interaction. All these have positive effects on the time on task principle that students spend their time more effective, because they are planning their schedules themselves and at the beginning. But there were two comments that focused on these discussions are time consuming because they needed to read a lot of messages. One student tagged online discussions as not practical:

> I do not see asynchronous discussions practical, because reading all the messages is taking my time a lot. I agree my friends are writing good responds, they are informative, but I cannot spend

> my time reading all messages and respond them. I also have six more lessons other than this one. During face-to-face discussions everything starts in a lecture hour and then finishes. I prefer this practical one.

During the interviews a question was asked about for what aims they used Internet and course Web site and the answers were grouped under the following items:

- having online discussions,
- getting news about the course,
- having related articles and sources,
- getting course materials,
- getting observation documents,
- learning information about observation schools,
- evaluating friends' homeworks.

As revealed students get most of the related information and documents through the Internet. Students commented the usage of course Web site was comfortable and supportive and they get everything on time. One student expressed:

> Having a different supportive environment is very good in the course. I wish that every course had Web support. Thus, I do not need to store each document and I can get whatever I need and any time.

One other student said getting the course documents in the face-to-face lectures as "time loss" and explained:

> I can get which document I need when I want. The teacher did not distribute in the face to face lecture. It is time loss. Instead we get them from the course Web site. If I lost, then I get it again instead of asking for the instructor or my classmates. And I think this prevented loosing time.

Additionally in the forum discussion about blended learning environments, students pointed on the good property of getting all course materials from Web and this enable them gaining time. One comment was:

> The best property of course Web site is that it stores all the course materials. We can reach them anytime we need and there is no need to lose time for getting them in class.

Three of the students allude to the freedom they had in blended course to organize their schedule. One student commented:

> Free from lectures I liked being free of organizing and using my time especially for the online part of this course.

Although the quantitative results revealed a high response rate of talking and helping students to get high expectations at the beginning of the semester, it was not a commented issue during the interviews.

4.2.6. The Principle of "Expectations"

"Expectations" subscale had one item with a mean score of (M=2.92). Means, percentages and number of responses for the question are provided in Table 4.10. The subscale has the lowest mean score between each of the subscales and thus the finding revealed that the students' perceptions were on the average of that expecting more. Although 31.9% of the respondents' perceptions were on the level of "Often" or "Very Often", 17.0% of the students' decisions were on "Never."

Table 4.10 Distribution of the Responses in the Principle of "Expectations"

Statements	% respondents						M	SD
	Very often	Often	Sometimes	Rarely	Never	Not included		
Assignments and projects required high standards for me to complete.	17.0 (8)	14.9 (7)	29.8 (14)	19.1 (9)	17.0 (8)	2.1 (1)	2.92	.90
Overall Mean Score							**2.92**	

According to the quantitative results the students were less clear on the principle of good practice communicates high expectations. During the interviews all the students explained that computer technologies and Internet support promoted high expectations. All interviewees mentioned about the contribution of asynchronous online discussions firstly. Five of the students pointed that because the asynchronous discussions is not time restricted, they struggle to write better instead of only saying what come their mind. One of the students noted:

> During the asynchronous online discussions I feel that writing is more effective than having verbal discussions. You have time thus you can make research on the subject. Also you can turn again and again to improve your writings. Because I have time to express my opinions, I try to do my best during forum discussions.

One of the participant commented similarly in forum. She pointed:

> In asynchronous forum discussions, the person can make comments what she could not explain in face-to-face sessions. But before writing, she was conceived each word in mind and firstly she criticized her ideas. Thus, the person makes better arguments than discussing in face-to-face classroom. I think also the instructor's expectation increases and she expects better searches and suggestments other than face-to-face discussions, because of the long time we have.

Two other students pointed on the self confidence of having written discussions help them to expect better during the discussions, and one comment was:

> At that times [during online discussion] only me and the computer in the room. Thus it is easier for me to write my ideas. I read what I write, then read it, rewrite it, correct it and post my best. I feel that I need to write better than the presented ideas during the face-to-face class. I am not a self confident person in crowded classroom but in forum discussions I feel confident.

Another opinion of the interviewees was about the computer technology supported them to have better lesson plans, documents, support materials for the course. They used computer applications during doing their homeworks and also

mentor teachers and others expect their help because they are active computer users. This make students expect more and being more knowledgably about different applications. Two students underline this issue and one commented:

> Because we are active computer users, our mentor teachers ask us to find good documents about each week's subject matter. My mentor teacher asked me to create a program for third grade students about "traffic". I explained her that it may time much time creating this, but I might find previously designed programs. We used it in the course and that was fun, thus she requested some other programs about different subject areas. I decide that I need to learn to design these CDs.

One other students idea was interesting that he started to look for different summer practice opportunities after his mentor teacher expected to design training CDs. He said:

> I do not know much about computer programs and this is my first year. After I see my mentor teacher at observation school asked for help for finding or creating programs for different subjects to use in the course, I decided that there are many things that I need to learn. But I think that request was good for my future because I realized that if I expect more, I get more and thus decided to look for a job for this summer related my profession.

Students pointed on one more issue of getting feedback of how well they were doing during the face-to-face or online discussions helped them being motivated in their learning process and improved their performance by expecting more. One student commented:

> The instructor commented my and other students' ideas during either face-to-face or online discussions. Hearing how well I am doing or not from my instructor increased my desire to the course. I felt that I need to do better and better.

4.2.7. The Principle of "Respects Diverse Talents and Ways of Learning"

Three items in the questionnaire inquired the students' perceptions related to "Respects Diverse Talents and Ways of Learning" principle. Means, percentages

and number of responses of the respondents are provided in Table 4.11. The findings revealed that students' perceptions about strategies of teaching and learning (M=3.78) overall, were positive about providing various methods of learning in the blended course.

Table 4.11 Distribution of the Responses in the Principle of "Diverse Talents and Ways of Learning"

Statements	% respondents						M	SD
	Very often	Often	Sometimes	Rarely	Never	Not included		
The instructor understood diverse student perspectives, explanations, culture, and interests.	29.8 (14)	44.7 (21)	21.3 (10)	2.1 (1)	0 (0)	2.1 (1)	4.04	1.19
It was employed multiple teaching approaches in the assignments to accommodate different learner characteristics and styles.	25.5 (12)	34.0 (16)	25.5 (12)	6.4 (3)	2.1 (1)	6.4 (3)	3.80	1.00
Selected readings and designed projects/activities that related to my background.	19.1 (9)	29.8 (14)	25.5 (12)	6.4 (3)	8.5 (4)	10.5 (5)	3.50	.79
Overall Mean Score							**3.78**	

With a high response rate, almost 74.5% (N=35) of the students agreed that oftenly or most oftenly "diverse student perspectives, explanations, culture, and interests" (M=4.04) were understood in the course. More than half 59.5% (N=28) of the respondents perceived on the level of "Very often" or "Often", "multiple teaching approaches in the assignments to accommodate different learner characteristics and styles" (M=3.80) were employed in the course. In another item about activities related to students' background, "The instructor selected readings and designed projects/activities that related to my background" (M=3.50), 48.9% (N=23) nearly half of students perceptions were on "Often" or "Most often" levels. Also there are four (8.5%) students that responded this was "Never" the issue in the course and five (10.5%) students perceived it was "Not Applicable" in the course.

It can be said that a number of students was in the disagreement that various activities and readings were selected according to their background.

Both the questionnaire and interview results show in the blended designed course both face-to-face activities, and online technologies and activities promoted diverse talents and ways of learning. In addition to the quantitative results, several points revealed from the interviews that students believed blended environment provided:

- diversity in class
- having more student involvement
- addressing more student

All the interviewed students pointed on the issue that technology contributed their style of interaction. Students agreed having both online and face-to-face discussions was a valid way of addressing different activities of learning. One of the interviewee named himself as "shadow student" and explained if there were not online discussions then he could not attend any of the face-to-face discussions and share his experiences and ideas. He said:

> I like expressing my ideas what I think about the subject matter or I like defending my ideas, but of course in asynchronous forum, not in face to face lecture. I feel that I am more relaxed in asynchronous discussions. I am a shadow student and I cannot explain my ideas easily in class. But I can explain everything during asynchronous online discussions what I could not say in face-to-face class.

One of the student's ideas was notable that she specified herself being a foreign student and felt better in online activities because of language problems or emotional status. She explained:

> I prefer forum better than face-to-face environment in the course, because I am a foreign student and I express myself better in asynchronous discussions and I do not always have the desire to speak or discuss with others during face-to-face course. It depends on my emotional status during the course. Also I think

> that the forum would be a very good way to improve the skills in English language writing.

In relation to having a learning environment supporting different points of views, one other interviewee commented about the value of getting different students experiences and ideas:

> If there was only face-to-face course then we could not get everyone's ideas. This is a deficiency in entirely face-to-face lectures. But because we have forum in the course, anyone write something and discuss. By the way we get more ideas and experiences thus we could benefit from more various visions about the topic.

Different from the above considerations, two of the interviewees stressed that they do not like writing much thus face-to-face discussions is more suitable for them. This clears the blended course enabled having different styles of activities for different learners. One of them said:

> I usually check the forum page to see what is being discussed and read my friends' comments, but usually I do not write. This is because I am not a person who likes writing a lot. But as a system, I prefer having forum discussions side by side to face-to-face discussions.

One other interviewee commented on the benefits of having variety activities:

> The variety of activities involves us different works. Maybe one cannot say everything he meant to say in a face-to-face course. This can happen for many reasons; being tired, feeling bad during the course and many other reasons make one student not to say whatever he would like to say during lesson, so the forum helps this student to express himself as he wants.

The students talked about the activities and documents used during the blended course. In consistent with the quantitative results interviewees explained that they were suitable for them. Some of the interview comments by different interviewees about the activities and documents:

> One of the best ways of learning something is by writing [thinking about writing in forum]. While I am writing, some misunderstood information is also consolidated and I learn unless I do not realize.
>
> Web site was the collectable environment for all the course documents.
>
> The discussion documents in asynchronous online discussions are collected and stored as the general property of online environment. Thus, it is possible using these stored documents in later times.
>
> Pinar [the student in scenarios] is experiencing the same things what we are during our learning and observation process. These situations are real for all of us. This is why I like scenarios. I think many of my friends get involved the discussions because they feel themselves in the scenarios as me.

In the last comment, the interviewee focused on the use of scenarios that selected according to their related experience or background.

One other issue students pointed were about the small video clips that were integrated in face-to-face lectures. As pointed in active learning principle results students agreed that working on video clips were supportive that it allows students to feel more involved in the lesson and effective for different student expectations.

4.2.8. "Design"

In the questionnaire there were ten items related to the "Design" of the blended course in addition to the seven GPP. Means, percentages and number of responses of the students are provided in Table 4.12. Mean scores on the statements about course design ranged from 3.78 to 4.17. The overall mean score of design calculated as M=3.92 and the results indicate that majority of the students perceptions are on the level of "Much Help". This meant that majority of the students' perceptions were positive in relation to the design of the course.

Table 4.12 Distribution of the Responses in "Design"

Statements	% respondents					M	SD
	Very Much Help	Much Help	Moderate Help	A Little Help	No Help		
The course Web site	36.2 (17)	48.9 (23)	10.6 (5)	4.3 (2)	0 (0)	4.17	.79
Scheduled dates to complete assignments.	36.2 (17)	36.2 (17)	23.4 (11)	2.1 (1)	0 (0)	4.06	.90
The face-to-face lectures	38.3 (18)	29.8 (14)	25.5 (12)	4.3 (2)	2.1 (1)	3.98	1.01
Profession and other aspects of your life	27.7 (13)	44.7 (21)	23.4 (11)	4.3 (2)	0 (0)	3.96	.83
Quality of written instructions	19.1 (9)	59.6 (28)	14.9 (7)	6.4 (3)	0 (0)	3.92	.78
Procedures to complete activities/assignments	21.3 (10)	55.3 (26)	14.9 (7)	8.5 (4)	0 (0)	3.89	.84
Relevance of the assignments to your educational goals	23.4 (11)	44.7 (21)	19.1 (9)	10.6 (5)	0 (0)	3.83	.93
The assignments	25.5 (12)	36.2 (17)	34.0 (16)	4.3 (2)	0 (0)	3.83	.87
Improve your electronic learning skills	29.8 (14)	36.2 (17)	19.1 (9)	14.9 (7)	0 (0)	3.81	1.89
The course objectives	21.3 (10)	42.6 (20)	25.5 (12)	8.5 (4)	0 (0)	3.78	.89
Overall Mean Score						**3.92**	

Between the design questions, the most highly rated item was "the course Web site" with a high response rate (85.1%, M=4.17). This is followed by the "scheduled dates for complete assignments" by the M=4.06 and 72.4%. In other questions the findings revealed that majority of the students agreed with the statements "face-to-face lectures" (M=3.98), "profession and other aspects of life" (M=3.96), "quality of written instructions" (M=3.92), "procedures to complete activities/assignments" (M=3.89), "assignments" (M=3.83) and "relevance of the assignments to your educational goals" (M=3.83), "improving electronic learning skills" (M=3.81), and "the course objectives" (M=3.78) that helped in their learning.

The interview results were in compatible with the qualitative results that students told they liked the course being designed in blended format. They pointed that if it was only online or only face-to-face then something would be missing. Only one of the interviewed student noted that there was no need for a blended course that taking the course online would be better for him. Some students' positive expressions about the design were:

> The blended design of the course makes me giving more interest on the course… Otherwise, if we do not meet one week after the face-to-face session then maybe I would not think anything about the course.
>
> Working with scenarios make me more interested with the course that I feel I am thinking about my life. I think the activities are designed by a good investigation and I agree of their quality.
>
> In face-to-face class discussions, three or four students always talk and others usually listen. In the blended course, because we have online discussions, everyone has the chance to express opinions…
>
> Having discussions in forum was effective. This is my first experience of taking a course in blended mode and I think, writing in forum improved my electronic learning skills, that I mean my writing, search on the net, using search sites, finding articles in electronic libraries etc.
>
> Each activity and homework has a deadline. The forum activities also had deadlines a week or usually ten days. After the last day, we could not write our opinions under that topic. For me that was good, because I followed the deadlines to complete all activities. Because discussing in the forum is a kind of class activity, then following some procedures was beneficial.
>
> The activities were directly related to our background and also future life. We are going to be teachers and the course was designed on this way to support us with the related activities for future job.
>
> It is motivating getting different ideas in the discussions… I like the course activities getting our opinions.

> The discussing scenarios were all about what we face off in our observations and this was motivating.

> While we are writing [having asynchronous discussions], because we have time, we are making research before commenting. Thereby, quality of our writings was improved.

Two other students commented on using asynchronous forum discussions were "time consuming" while one of them pointed on another issue "misunderstanding of expressions". Because body languages and gestures convey important meanings in face-to-face discussions, in asynchronous discussions there may be some misunderstandings because lack of these. One student said:

> In asynchronous forum discussions, because we are interacting by only writing, misunderstanding may be appeared. While we are talking we use gestures or face expressions, but we cannot have the advantage of these during forum discussions.

She also commented that misunderstandings may be prevented by using emoticons or there may be a sense of personality. She said:

> I want to say that, my friends are not actively using smiley icons in their expressions, but I love them☺. Honestly, if I am commenting on asynchronous discussions I like to use them a lot… I think it eases to express our emotion.

4.2.9. "Usability of the Course Web Site"

Eleven items in the perceptions questionnaire was about the usability of the course Web site. Because the course designed in blended format and there is an online environment, the usability of the designed Web site was one of the critical elements in getting students perceptions. Means, each level percentages and number of responses of the respondents are provided in Table 4.13. The findings show the overall mean (M=3.72) of this group of items were at the "Much help" level that majority of the respondents perceived the Web site was usable and had much help in regards to their learning.

Table 4.13 Distribution of the Responses in "Usability of the Course Web Site"

Statements	% respondents					M	SD
	Very Much Help	Much Help	Moderate Help	A Little Help	No Help		
Use of discussions	46.8 (22)	25.5 (12)	19.1 (9)	6.4 (3)	0 (0)	4.15	.97
Up-to-date course content	31.9 (15)	31.9 (15)	29.8 (14)	2.1 (1)	2.1 (1)	3.91	.96
Navigation of the course site	27.7 (10)	44.7 (21)	31.9 (15)	2.1 (1)	0 (0)	3.85	.78
Start up information found on course homepage	29.8 (14)	31.9 (15)	31.9 (15)	6.4 (3)	0 (0)	3.85	.93
Organization of information	29.8 (14)	31.9 (15)	21.3 (10)	10.6 (5)	2.1 (1)	3.80	1.08
Locating information within the course	23.4 (11)	31.9 (15)	36.2 (17)	6.4 (3)	0 (0)	3.74	.91
Visual appeal of the course	27.7 (13)	31.9 (15)	25.5 (12)	8.5 (4)	4.3 (2)	3.72	1.11
Information on how to be successful in online environment	21.3 (10)	42.6 (20)	21.3 (10)	8.5 (4)	6.4 (3)	3.64	1.11
Information on technical requirements for taking Web courses	19.1 (9)	34.0 (16)	29.8 (14)	10.6 (5)	4.3 (2)	3.54	1.07
Relevant links	17.0 (8)	36.2 (17)	25.5 (12)	19.1 (9)	2.1 (1)	3.47	1.06
Support for dealing with technical problems	14.9 (7)	25.5 (12)	38.3 (18)	12.8 (6)	6.4 (3)	3.30	1.09
Overall Mean Score						**3.72**	

The most highly perceived item in the web site was related to the asynchronous discussions. With a high response rate 72.3% (M=4.15) of the students agreed that "use of discussions" were helped very much or much in their learning. Secondly students rated "up-to-date course content" (M=3.91) helped them in their learning, because the Web site provided the course being fresh all the time. These items followed by "navigation of the course site" (M=3.85), "start up information found on course homepage" (M=3.85), "organization of information" (M=3.80), "locating information within the course" (M=3.74), "visual appeal of the

course, (M=3.72), “information on how to be successful in online environment” (M=3.64), “information on technical requirements for taking Web courses” (M=3.54), “relevant links” (M=3.47) and “support for dealing with technical problems” (M=3.30). As seen in the Table 4.14. “use of discussions” (M=4.15) was valued as the very much helped issue and “support for dealing with technical problems” (M=3.30) was rated as the lowest among all usability items for students’ learning.

Consistent with the responses in the questionnaire, almost all of the interviewees talked about the benefits of using discussions, especially asynchronous threaded discussion process. Forum transcripts revealed and also interviewed students linked the benefits of having forum discussions:

- prevents the confusion in class discussions
- easy way of sharing ideas
- an active learning environment
- effective in problem sharing
- comfortable
- an environment for different student behaviors (shy, shadow, passive etc.)
- prevents breaks between the lecture hours,
- support investigation
- enable more focused discussions
- provide a written document
- facilitate contact between student
- facilitate contact between instructor and students
- time flexibility for opinion sharing
- place flexibility for opinion sharing
- felt students more free

One of the students who had some negative opinions about the asynchronous online discussions stated one main reason: writing and reading long

comments is time consuming. He explained that he hates writing and it is easier having discussions in face-to-face classroom instead of writing:

> I believe that reading all the comments in asynchronous forum is sometimes very time consuming. I only estimate that some of my friends wrote two word page comments on only one subject. Reading everything in details is not easy.

One other student stated that she could not attend the asynchronous forum discussions because she did not have Internet access at home and it was only limited with the laboratories at the university. Also there was a negative comment in forum that two students complained of duplicated comments during asynchronous discussions. One wrote:

> Because it is a free environment and no time restriction, I see that my friends are writing very long comments and some of them seen as the repeating of each other. In face-to-face discussions, if somebody says something about the subject, usually others do not repeat same ideas. But this is not prevented on written discussions.

Interviewed students were also generally positive towards the design of the discussion page. Students found the visual appeal of the course Web site suitable but some of the criticisms were about the menus. One participant said:

> Accessing the information and documents for me was not easy at the beginning. This may be because I am a new computer user, but I believe the menu names are very similar with each other. Thus, maybe the number of menus should be decreased and contents joined.

The participants who had partially negative opinions about the usability of the technical problems stated one main reason: password problem. Almost all students emphasized on the problem of not able to change their passwords and system getting them off from the site in a very short time:

> In general the course Web site was good. But I could not change my password given at the beginning of the semester…

> … it is a short time that the system makes me offline. In every ten minutes I need to enter my password again to log in. This takes time…

The results show that most of the comments were positive about the usability of the course Web site and it was beneficial using such a Web site in the course.

4.2.10. Student Comments

Students' preference was asked both at the beginning and end of the semester, about taking the course with only traditional methods, or with fully online, or mix of two (see Table 4.14).

Table 4.14 Students' Preference on Face-to-Face, Online or Blended Mode

	Beginning of the Semester		**End of the Semester**	
	f	**%**	***f***	**%**
Face-to-face (traditional)	19	40.4	3	6.4
Online	16	34.1	7	14.9
Blended (Mixed form)	12	25.5	37	78.7
Total	47	100	47	100

At the beginning of the semester answers revealed the preference ranking of face-to-face and fully online are close to each other. 40.4% of the students preferred face-to-face and 34.1% preferred online course. Only twelve students (25.5%) preference were through the blended mode. But when the semester end and their ideas asked again, the results showed that their preference changed after taking the course in blended mode. Majority of the students' (N=47) choice was getting the course in blended fashion with a response rate of 78.7%. Only three students preferred taking their course in traditional mode and seven of the students preferred online mode. Results showed after taking the course in blended mode, most of the students' preference changed by the time. Also the qualitative findings supported these results as seen below.

Some students thought each method had its own advantages and disadvantages, some others said taking the course in blended mode was much livelier and motivating. Also some students felt that learning in a technology supported environment was more attractive and innovative. Also some pointed in the face-to-face mode they could concentrate more on their learning. Some students said in online mode they do not need to come to the school but anyway meeting together in face-to-face class in some weeks was good. Some of the student's opinions about blended mode are outlined below:

> I believe that the blended mode is the ideal mode of instruction as we used in this course. We met face-to-face weekly or sometimes in fifteen day period. Also we continued our discussions in asynchronous online forum and reached every document or source related to the course by the course Web site. This is my first experience of taking a course in blended mode and I benefit from the advantages of both modes a lot.
>
> I have access the lecture notes any time and I can write whatever I want to ask to the instructor or my friends in forum or by e-mail. This is a good opportunity.
>
> We can learn without time and place limitation. Additionally for example I catch up one of the sessions that I did not attend face-to-face lecture. Asynchronous online discussions were a follow-up for face-to-face lecture and this was encouraging.
>
> Discussions were available just inside the campus in face-to-face courses. But in blended course, they go beyond by online discussions.

One of the student's ideas was attractive that he explained he liked blended mode but if they do not have face-to-face sessions, than this course would not be a real course. He said:

> I am pleased with the course getting on this way [blended mode]. It is advantageous having all course materials on the Web. Also I like online discussions in forum. But face-to-face lectures provide us getting more involved in the course. If it was only online then I could not feel it is a real course.

One other student explained that she liked blended lesson but anyway expressed her preference on face-to-face mode because having directly eye contact. She said:

> Understanding in face-to-face lectures is easier than in online sessions. I cannot concentrate and understand if I do not have eye contact with the instructors or fellows.

One other student said her preference of face-to-face class and added about the benefit she gets other than online environment:

> I carefully listen both my friends and instructor in the face-to-face class, and I understand better what they say. Having direct contact is an opportunity. I cannot catch this during online discussions.

In addition the students' were asked about their ideas of the benefits of face-to-face and online environments and what they liked or disliked about these environments. The open-ended responses in the questionnaire were grouped under questions and frequencies given in Table 4.15.

Table 4.15 Students' Comments About the Positive and Negative Features of Online and Face-to-Face Environments.

Questions	Comments	*f*
The benefits of face-to-face course and what they liked:	- Asking immediate questions	- 17
	- Getting immediate feedback	- 13
	- Eye-contact	- 21
	- Improve social interaction	- 7
	- Having discussions by speaking	- 22
	-	
The benefits of face-to-face course and what they liked:	- Detailed and more deep discussions	- 12
	- More serious learning environment	- 5
	- Learning by listening	- 6
	- Asking timely questions	- 16
	- Physically being together	- 25
	- To see instructors and friends once a week	- 13
Negative features of face-to-face instruction and what students disliked:	- Not whole participation by all students	- 22
	- Time limitation	- 18
	- Stricted discussion subjects	- 6
	- Coming to university for lessons	- 13
	- Bored in lessons	- 7
	- Crowded classroom	- 24

Table 4.15 (Continued)

Questions	Comments	*f*
Negative features of face-to-face instruction and what students disliked:	- Uncomfortable discussions - Limited focus because of limited time	- 6 - 6
What students liked in online part of the course and the benefits of online environment.	- No time limitation - Easy interaction - All time access to course materials - Opportunity to correct opinions and misunderstandings in forum - Having easier discussions - Good to see all class members ideas - Getting detailed feedback to the answers - Having detailed discussions - Effective discussions - Expressing ideas by writing - Good for less active or shy students - Getting feedback from other class members as well as course instructor - Meeting other than class time - No obligation to come to the university - Using the time effectively - Make learning easier - More attractive	- 27 - 13 - 29 - 14 - 8 - 12 - 12 - 14 - 13 - 15 - 19 - 15 - 11 - 6 - 8 - 6 - 12
Negative features of online instruction and what students disliked	- Slow feedback - Some technical problems - Takes too much time - Make away from being sincerity - Spending more time for one discussion topic - Feeling isolated - No face-to-face contact - Explaining ideas by writing	- 5 - 17 - 6 - 4 - 6 - 5 - 9 - 6

4.3. Learners' Motivation in the Blended Course (Research Question 2)

This section focused on the findings related to students' motivation in the course designed in blended mode. All students were asked to complete CIS to assess their motivation as it related to the course. Data from CIS (related to learner attention, relevance, confidence and satisfaction) provided situational measures of motivation. In the CIS there were 8 attention related, 8 relevance related, 9 confidence related and 9 satisfaction related questions with a total of 34 questions measuring the four motivational levels of the learners. It was a Likert Type scale with 1 (Strongly Disagree) and 5 (Strongly Agree). The minimum and maximum

scores for attention and confidence subscales were 8 and 40, for relevance and satisfaction subscales were 9 and 45. Each sub-score were analyzed and the number of items, means, standard deviations, minimum and maximum scores of each subscales are reported in Table 4.16. The overall mean score is 125.01 and the highest possible total motivation score was 170.0. Results revealed for each sub-scale the means ranged from 28.44 for the Attention, 34.21 for the Relevance, 29.36 for the Confidence and 33.00 for the Satisfaction. Average scores for each subscale and each of the items are provided separately in each subscale tables (Table 4.17, Table 4.18, Table 4.19, and Table 4.20).

Table 4.16 Statistics for the ARCS Sub-Scores on CIS

Sub-Scales N=47	Number of Items	M	SD	Min	Max
CIS Attention	8	28.44(3.55)	7.01	8.0	40.0
CIS Relevance	9	34.21 (3.80)	7.51	9.0	45.0
CIS Confidence	8	29.36 (3.67)	7.31	8.0	40.0
CIS Satisfaction	9	33.00 (3.66)	7.50	9.0	45.0
CIS Total	34	125.01 (3.67)	29.33	34.0	170.0

Means and standard deviations for the attention subscale are reported in Table 4.17. The overall mean score of the attention subscale is 3.55. Means ranged from 3.96 for the item about using different teaching techniques to make the course interesting for getting attention in the course (item number 24) to 2.83 about doing "unusual things that are interesting" (item number 21) for increasing attention items.

Table 4.17 Statistics for the "Attention" Sub-Scores on CIS

Statements	M	SD
Item #1 The instructor knows how to make us feel enthusiastic about the subject matter of this course.	3.81	.86
Item #4 This course has very little in it that captures my attention.	3.15	.97

Table 4.17 (Continued)

Statements	M	SD
Item #10 The instructor creates suspense when building up some points.	3.56	1.06
Item #15 The students in this class seem curious about the subject matter.	3.68	.86
Item #21 The instructor does unusual things that are interesting.	2.83	.89
Item #24 The instructor uses interesting variety of teaching techniques (questioning, direct instruction, scenario based instruction etc.).	3.96	.75
Item #26 I often daydream while in this course.	3.91	.91
Item #29 My curiosity is often stimulated by the questions asked on the subject matter in this course	3.54	.72
Overall mean	**3.55**	

The results show that relevance (M=3.80) subscale had the highest mean score between ARCS subscales. Means and standard deviations for the relevance subscale are reported in Table 4.18. Between the items, the second relevance item "The things I am learning in this course will be useful to me" (M=4.06) had the highest mean while item number twenty three "To accomplish my goals, it is important that I do well in this course" (M=3.56) item had the lowest mean score.

Table 4.18 Statistics for the "Relevance" Sub-Scores on CIS

Statements	M	SD
Item #2 The things I am learning in this course will be useful to me.	4.06	.84
Item #5 The instructor stresses on the subject matter of this course that seem important.	3.80	.88
Item #8 I do NOT see how the content of this course relates to anything I already know.	3.79	.95
Item #13 In this course, I try to set and achieve high standards of excellence.	3.74	.79
Item #20 The content of this course relates to my expectations and goals.	2.62	.85
Item #22 The students actively participate in this class.	3.91	.80
Item #23 To accomplish my goals, it is important that I do well in this course.	3.56	.80
Item #25 I do NOT think I will benefit much from this course.	3.91	.83
Item #28 The personal benefits of this course are clear to me.	3.82	.76
Overall mean	**3.80**	

Table 4.19 reports the means and standard deviations for the confidence subscale of ARCS. The overall mean score of the attention subscale is calculated 3.67. Means "ranged from 4.30 "The subject matter of this course is just too difficult for me" item to 2.96 for doing "You have to be lucky to get good grades in this course" items.

Table 4.19 Statistics for the "Confidence" Sub-Scores on CIS

Statements	M	SD
Item #3 I feel confident that I will do well in this course.	4.13	.65
Item #6 You have to be lucky to get good grades in this course.	2.96	1.18
Item #9 Whether or not I succeed in this course is up to me.	3.61	.97
Item #11 The subject matter of this course is just too difficult for me.	4.30	.91
Item #17 It is difficult to predict what grade the instructor will give to my assignments.	3.38	.85
Item #27 As I am taking this course, I believe that I can succeed if I try hard enough.	3.74	.97
Item #30 I find the challenge level in this course to be about right neither too easy nor too hard.	3.56	.80
Item #34 I get enough feedback to know how well I am doing.	3.68	.81
Overall mean	**3.67**	

The last subscale of ARCS is satisfaction, and means and standard deviations for are reported in Table 4.20. There were 9 items related to satisfaction in the survey and the overall mean score calculated as 3.66. Means ranged from 3.85 for the item of "I feel that this course gives me a lot of satisfaction" to 3.48 "I have to work too hard to succeed in this course" items.

Table 4.20 Statistics for the "Satisfaction" Sub-Scores on CIS

Statements	M	SD
Item #7 I have to work too hard to succeed in this course.	3.48	.94
Item #12 I feel that this course gives me a lot of satisfaction.	3.85	.93
Item #14 I feel that the grades or other recognition I receive are fair (equitable) compared to other students.	3.87	.92

Table 4.20 (Continued)

Statements	M	SD
Item #16 I enjoy working for this course.	3.54	.91
Item #18 I am pleased with the instructor's evaluations of my work compared to how well I think I have done.	3.60	.71
Item #19 I feel satisfied with what I am getting from this course.	3.51	.80
Item #31 I feel rather disappointed with this course.	3.87	.88
Item #32 I feel that I get enough recognition of my work in this course by means of grades, comments, or other feedback	3.51	.62
Item #33 The amount of work I have to do is appropriate for this type of course	3.77	.79
Overall mean	**3.66**	

4.4. Learners' Motivation for the course Web Site in the Blended Course (Research Question 3)

This section revealed the findings related to students' motivation to the Web site used in the blended course. All students were asked to complete IMMS to assess their motivation related to the Web site. Data from IMMS (related to learner attention, relevance, confidence and satisfaction) provided situational measures of motivation to the material used in the learning process. In the IMMS questionnaire there were 12 attention related, 8 relevance related, 8 confidence related and 5 satisfaction related questions with a total of 33 questions. It was a Likert Type scale with 1 (Strongly Disagree) and 5 (Strongly Agree). The minimum and maximum scores for attention subscale was 12 and 60, for confidence subscale 8 and 40, for relevance subscale again 12 and 40, and for satisfaction subscale 5 and 25 with a total score of 165. The number of items, mean, standard deviation, minimum and maximum scores of each subscales are provided in Table 4.21.

Table 4.22 reports the means and standard deviations for the attention subscale of ARCS for the course web site. The overall mean score of the attention subscale is calculated 3.52. Means ranged from 3.93 "There are so many annoying

words on each web page" item to 3.04 for doing "The amount of repetition in the course web site caused me to get bored sometimes" items.

Table 4.21 Statistics of the ARCS Sub-Scores on IMMS

Sub-Scales N=47	Number of Items	M	SD	Min	Max
IMMS Attention	12	42.23 (3.52)	10.59	12.0	60.0
IMMS Relevance	8	30.06 (3.76)	6.37	8.0	40.0
IMMS Confidence	8	30.51 (3.81)	5.83	8.0	40.0
IMMS Satisfaction	5	17.71 (3.54)	3.01	5.0	25.0
IMMS Total	33	**120.51 (3.65)**	25.80	33.0	165.0

Table 4.22 Statistics for the "Attention" Sub-Scores on the IMMS

Statements	M	SD
Item #2 There was something interesting when I first looked at the course web site that got my attention.	3.66	.84
Item #7 The course web site is eye-catching.	3.21	.90
Item #10 The quality of the writing in the web site helped to hold my attention.	3.62	.99
Item #11 The course web site is so abstract that it was hard to keep my attention on it.	3.57	.90
Item #14 The design of the course web site looks dry and unappealing.	3.45	1.01
Item #17 The way the information is arranged in the course web site helped to keep my attention for the course content.	3.85	1.06
Item #18 The course web site has things that stimulated my curiosity.	3.38	.84
Item #20 The amount of repetition in the course web site caused me to get bored sometimes.	3.04	1.18
Item #22 I learned some things that were surprising or unexpected.	3.31	1.02
Item #25 The variety of announcements, reports, activities, course scenarios etc., helped keep my attention in web site.	3.85	.88
Item #26 The style of writing in forum is boring.	3.53	1.16
Item #28 There are so many annoying words on each web page.	3.93	1.00
Overall mean	**3.52**	

Total mean score and standard deviation of the relevance subscale that calculates learner motivation toward the Web site is shown in Table 4.23. Relevance is the second highest scale between the ARCS scores in IMMS survey

with a mean score of 3.76. Between the relevance items "Completing this lesson successfully was important for me" (M=4.23) get the highest mean score whereas "The content of the course web site is useful to me" (M=3.08) get the lowest score.

Table 4.23 Statistics for the "Relevance" Sub-Scores on the IMMS

Statements	M	SD
Item #5 It is clear to me how the content of the course web site is related to things I already know.	3.64	.70
Item #8 There were discussions, assignments and activities that showed me how the course web site could be important to people who are taking school experience course.	3.94	.81
Item #9 Completing this lesson successfully was important for me.	4.23	.76
Item #15 The content of the course web site is relevant to my interests.	3.60	.65
Item #21 The content in the course web site convey the impression that its content is worth knowing.	3.72	.65
Item #23 The course web site was not relevant to my needs because I already knew most of it.	3.74	.92
Item #27 I could relate some of the content of the course web site to things I have seen, done, or thought about in my own life.	3.91	.69
Item #30 The content of the course web site is useful to me.	3.08	.64
Overall mean	**3.76**	

Confidence is the sub-scale in IMMS questionnaire that calculated student motivation toward the Web-site used in the blended course process. The total confidence subscale is found as 3.81, which had the highest mean score between four ARCS subscales. The item "When I first looked at the course web site, I had the impression that it would be easy for me" (M=4.13) get the highest and "The course web site was more difficult to understand than I had expected at the beginning" (M=3.08) get the lowest mean score between the confidence items (see Table 4.24).

Table 4.24 Statistics for the "Confidence" Sub-Scores on the IMMS

Statements	M	SD
Item #1 When I first looked at the course web site, I had the impression that it would be easy for me.	4.13	.88
Item #3 The course web site was more difficult to understand than I had expected at the beginning.	3.08	.64
Item #4 After reading the syllabus, I felt confident that I knew what I was supposed to learn.	3.75	.72
Item #6 Many of the course pages had so much information that it was hard to pick out and remember the important points.	3.47	.95
Item #12 As I worked on the course web site, I was confident that I could learn the content.	3.91	.80
Item #17 Writing forum messages in the course web site was too difficult.	3.85	1.06
Item #31 I could not really understand quite a bit of the material in the course web site.	3.87	.65
Item #32 The good organization of the content helped me to be confident that I would learn.	4.00	.69
Overall mean	**3.81**	

Satisfaction is the last IMMS subscale which has a total mean score of 3.54 (see Table 4.25). Between five items, "It felt good to successfully complete this lesson" (M=4.04) get the highest mean score and "I enjoyed the course web site so much that I would like to know more about this topic" (M=3.31) had the lowest mean score.

Table 4.25 Statistics for the "Satisfaction" Sub-Scores on the IMMS

Statements	M	SD
Item #13 I enjoyed the course web site so much that I would like to know more about this topic.	3.31	1.00
Item #19 I really enjoyed studying with the course web site.	3.42	.88
Item #24 The feedback after the activities or of other comments in this lesson (forum, class environment etc.) helped me feel rewarded for my effort.	3.35	.92
Item #29 It felt good to successfully complete this lesson.	4.04	.55
Item #33 It was a pleasure to work on such a well-designed web site.	3.57	.58
Overall mean	**3.54**	

4.5. Relationship between Motivation and Perceptions (Research Question 4)

A correlational analysis was performed between four of ARCS subscales (attention, relevance, confidence, and satisfaction) and total motivation score. The results of the correlational analyses represented in Table 4.26 show that ten of the correlations were statistically significant on .01 level. The correlations between attention and relevance, $r(45)= .58$, $p<.01$; attention and confidence, $r(45)= .46$, $p<.01$; attention and satisfaction, $r(45)= .51$, $p<.01$; relevance and confidence, $r(45)= .42$, $p<.01$; relevance and satisfaction, $r(45)= .64$, $p<.01$; confidence and satisfaction, $r(45)= .63$, $p<.01$ was significant. Additionally, total motivation score and attention, $r(45)= .79$, $p<.01$; total motivation score and relevance, $r(45)= .82$, $p<.01$; total motivation score and confidence, $r(45)= .79$, $p<.01$; and total motivation score and satisfaction, $r(45)= .86$, $p<.01$ was significant. Means and standard deviations of each subscores and total motivation score were reported in Table 4.26. The results show that satisfaction was the subscale that has strongest relationship to the total motivation ($r= .86$). This correlation followed by the relationships of relevance ($r= .82$), and an equal correlation of attention and confidence ($r= .79$) with the total motivation.

Table 4.26: Correlations among the four ARCS Categories and Total Motivation Score

	Attention	Relevance	Confidence	Satisfaction
Relevance	.58**			
Confidence	.46**	.42**		
Satisfaction	.51**	.64**	.63**	
ARCS_Total	.79**	.82**	.79**	.86**

** Correlation is significant at the 0.01 level (2 tailed).

The study investigated if there is a relationship between student motivation and perceptions in the blended course. Pearson Correlation Coefficient was conducted to clarify whether there was any significant relationship between motivation and perceptions, and each dimensions of motivation scale with each of the principles. Table 4.27 indicates the correlations between variables. The results showed there is a relationship between student's total motivation score with total perception score r= .29, p<.05. When looked at the motivation dimensions and each perception principle, eleven significant relationships are calculated. These correlations are highlighted in table 4.27. When looked at the four motivation subscales, significant relationships found between attention dimension with seventh GPP principle named respects diverse talents and ways of learning with a score of r= .31, p<.05; design r= .36, p<.05; and usability r= .49, p<.01. Confidence dimension and feedback principle, r= .37, p<.005 had a significant relationship; satisfaction dimension with feedback (P4), r= .30, p<.05; time on task principle (P5), r= .31, p<.05 and also with the usability r= .37, p<.05 had significant relationships. Also significant relationship found between total motivation score with the principle of respects diverse talents and ways of learning (P7), r= .34, p<.05; design r= .29, p<.05; and usability r= .42, p<.01. Freankel and Wallen (1996) point correlation coefficients below .35 shows slow relationships. Thus, it can be resulted that the most of the relationships found small except usability and attention; and design and attention; usability and satisfaction; and usability and total motivation score. All the relationships found positive.

Table 4.27: Pearson Correlation Matrix among Motivation and Perception Scores

	P1	**P2**	**P3**	**P4**	**P5**	**P6**	**P7**	**Design**	**Usability**	**Perception Total**
A: Pearson Correlation	.26	.23	.27	.03	.21	.02	**. 31***	**. 36***	**.49****	**. 30***
Sig (2-tailed)	.08	.13	.07	.82	.15	.91	.04	.014	.00	.04
N=47										

Table 4.27 (Continued)

	P1	P2	P3	P4	P5	P6	P7	Design	Usability	Perception Total
R: Pearson Correlation	.07	.09	.14	.04	.20	.04	.25	.26	.25	.19
Sig (2-tailed)	.63	.55	.34	.78	.18	.80	.09	.07	.92	.19
N=47										
C: Pearson Correlation	-.04	.04	.07	**. 37***	.15	.06	.28	.12	.26	.22
Sig (2-tailed)	.79	.81	.62	.01	.31	.69	.06	.41	.08	.15
N=47										
S: Pearson Correlation	.02	.05	.12	. **30***	**. 31***	-.01	.27	.18	**. 37****	.21
Sig (2-tailed)	.91	.76	.44	.04	.04	.94	.06	.22	.01	.17
N=47										
ARCS_Tot										
Pearson Correlation	.10	.05	.19	.22	.27	.03	**. 34***	**.29***	**.42****	**.29***
Sig (2-tailed)	.50	.76	.20	.14	.07	.83	.02	.47	.00	.46
N=47										

* Correlation is significant at the 0.05 level (2-tailed)

** Correlation is significant at the 0.01 level (2-tailed)

4.6. Summary

In this chapter the qualitative and quantitative data collected from the participants were analyzed. Both of the qualitative and quantitative data analyzed concurrently. Results revealed that students' perceptions in the blended course were mostly positive. The quantitative scores for each GPP ranged from a low of 2.96 (expectations) to a high of 4.01 (student-faculty contact) and qualitative data were in accordance to quantitative data. Six of the seven good teaching principles were in the higher range as well as design and usability issues. These were student faculty contact (4.01), cooperation (3.92), time on task (3.90), diversity and ways of learning (3.78), feedback (3.59), active learning (3.49), expectations (2.59), and design (3.92), usability (3.72). Also results revealed attention, relevance, confidence, and satisfaction subscores revealed significantly higher levels of motivation among students. Total score for ARCS (3.67) and four subscales were calculated by CIS. The scores ranged from higher to lower scores were relevance

(3.80), confidence (3.67), satisfaction (3.66) and attention (3.55). Additionally to get learner's motivation for the course Web site, total mean score for ARCS (3.65) and four subscales were calculated by IMMS. The ranking from higher to lower scores were confidence (3.81), relevance (3.76), satisfaction (3.52) and attention (3.52). Lastly, correlational analysis conducted between learners' perceptions and motivations. Results showed small significant relationships between student's total motivation score with total perception score $r = .29$, $p < .05$. Additionally, when looked at the motivation dimensions and each perception principle, eleven significant relationships are calculated.

CHAPTER 5

DISCUSSION AND CONCLUSION

This chapter is written to examine the findings of this study with interpretation of the results and concludes with implications for further practice with suggestions for future research. In this study student perceptions were gathered in a blended course relative to the use of Chickering and Gamson's (1987) Seven Principles for Good Practice in Undergraduate Education. The principles cover contact between student and faculty, cooperation among students, active learning, feedback, time on task, expectations and ways of learning. Furthermore motivational requirements specified by Keller's ARCS, students' motivations were gathered and analyzed.

5.1. The Major Findings and Discussion

5.1.1. Learners' Perceptions in the Blended Course

The first research question examined students' perceptions in the blended course and perceptions in relation to each good teaching principle. To address these questions, the mean scores and standard deviations of the participants for all items

were calculated in each of the sections of the Principles and Perceptions questionnaire. High scores reflected that participants had positive perceptions related to the blended course including good teaching principles and lower scores reflected lower positive perceptions. The scores of each GPP range from a low of 2.96 (expectations) to a high of 4.01 (student-faculty contact). Six of the seven good teaching principles were in the higher range as well as design and usability issues. These were student faculty contact (4.01), cooperation (3.92), time on task (3.90), diversity and ways of learning (3.78), feedback (3.59), active learning (3.49), expectations (2.59), and design (3.92), usability (3.72). In addition, qualitative data gathered by interviews, forum transcripts, open-ended questions, and documents. Based on the quantitative and qualitative data it would seem that students' perceptions were positive toward the blended course in general. The highest scores in the good teaching principles' groups of contact, cooperation, and time on task indicate that the blended environment enabled interaction easier and made instructors and students accessible to each other; promote group and peer learning; emphasize using time more productively. The only principle expectations was perceived as that needs improvement and not supported well by the blended course. Also design of the course and usability of the course Web site were other highly positively perceived issues other than seven principles by students. Each principle is examined thoroughly below:

Contact between Students and Faculty: Interaction with classmates and course instructor is a significant contributor that students positively perceived in the blended course. Students agreed using Web is an opportunity that enabled easy interaction in the blended course. The pointed issue was about the online part of the blended course mostly supported their interaction and facilitated the contact between each other. This finding concurs with Fredericksen, Pickett, Pelz, Shea, and Swan (2000); Motiwalla and Tello (2000); and Swan, Shea, Fredericksen, Pickett, Pelz, and Maher's (2000) findings that students generally perceived the asynchronous part of the courses as supporting interactivity and involvement. It is perceived as an advantage of the blended course that technology increased

students' involvement with others and course materials. Thus results revealed that majority of the students perceived student-student and student-instructor interaction encouraged and maintained throughout the blended course experience.

The data indicated students positively perceived that Web promoted their contact with others. The advantages of the Web through opening up a way by enhancing communication, particularly via e-mail, is clear (Chickering & Ehrmann, 1996). Supporting Chickering and Ehrmann, learners experienced that using e-mail was an effective way of facilitating their communication with the instructors. Students highly perceived that their instructor is anytime available for assistance by electronic communication ways primarily e-mail or discussion board. By enabling both modes of instruction, blended course perceived as the environment enhanced students' communication with instructors, course assistants, or between each other, and made easy of contact between students and faculty.

Results revealed students pleased of getting quick response from the instructors by e-mail instead of waiting for the office hours. Having contact opportunity with instructors and other class members, and knowing that they are available for assistance anytime was a motivating way that felt more comfortable themselves. The results correlated with Ritter and Lemke's (2000) findings on the geography course that e-mails used as an effective way of communication that improve student-faculty contact. Additionally students agreed on the instructor's use of e-mail for tracking them. It was positively perceived that the instructor contacting with the students when she had not heard from them whether in online or face-to-face sessions. In their study Visser, Plomp, Amirault, and Kuiper (2002) used written messages with an aim to help students to become and stay motivated during their working hours and giving an idea that the instructors is following their studies. In relation to that study results, interview findings showed that students have positive perceptions in the use of e-mail messages for tracking their entity in the course that motivated themselves. The study results done by Ersoy (2003) supported the findings that students expected a kind of encouragement from their instructors contacting by email or privately to ask the reasons of nonparticipation.

The findings also corroborated by Graham, Cagiltay, Craner, Lim and Duffy's (2000) suggestions that the instructor should contact with the students who are not participating to the online discussions. They also point "because there are not frequent face-to-face meetings, it is easy for students in an online course to fall through the cracks and to be forgotten if they don't participate in asynchronous conferencing or make contact by e-mail" (Graham et al., 2000, p. 9). Unlike from Graham et al.'s (2000) study, due to this is a blended course, there were both online and face-to-face activities that prevented students being lost in purely online courses and by private e-mail messages students encouraged being active in both of these environments. Thus it can be said that, preventing students from online lost may be one of the reasons of designing the courses in blended mode. As results revealed, in the whole blended course tracking was a good motivator for students being committed to the course.

Other than e-mails, asynchronous forum discussions were other positively perceived issue that students addressed for communication throughout the blended course process. In the study having chat discussions was volunteered because the students were meeting face-to-face almost each week, they rarely prefer interacting through chat. Thus results showed the volunteer participation to chat were low. This might be concluded that some motivational factors can be found for students to interact with the volunteer activities. Results showed students made some comparison between face-to-face and asynchronous communications. Although some comments showed learners felt online discussions were not a viable replacement for face-to-face communication, most of them explained that they engaged in asynchronous discussions. An interesting result was that students perceived having written chat in forum was a good way to share personal information. It was agreed by respondents that the asynchronous discussions enabled them to understand their classmates' ideas and personalities and enhanced the development of their relationship between class members. Palloff and Pratt (1999) suggest that asynchronous discussions might increase the reflection and thoughtfulness in student discussions. Thus the determined result may be because

the students feel freer to express themselves during written discussions in reason for they are physically separated. By the way their reflection might be more detailed and sincere. These findings also supported by the literature that having asynchronous online discussions helped the development of personal relationships in study groups (Bonk, Olson, Wisher, & Orvis, 2002). These results might reveal that friendships started through asynchronous online discussions continued in face-to-face.

The technological part in the blended course empowered student-student and student-instructor interaction, and helped students sharing their ideas with each other. Several students perceived interaction between students and the instructor was more than they expected. Palloff and Pratt (1999), focus on the importance of interaction explain, interaction among students and between students and instructors is the key point of learning that resulted from these interactions and engaging the courses with online applications facilitate student-instructor and between students interaction. Also students explained the close relationship between classmates had facilitated by asynchronous online discussions. In face-to-face class sessions, because of the large student group, students complained of the inadequate interaction. They perceived that the online part of the course made them met with many others in class that they could not do in face-to-face. This result may be seen as one of the advantages of designing the courses in blended more thus online part responds the missing of the face-to-face part or vice versa. This is supported by the literature that blended courses have the potential to capture the benefits of both environments (Osguthorpe, & Graham, 2003; Riffell, & Sibley, 2004). Czerniewicz (2001) points that online courses gives the participants fast and easy access to the other people in the same network but this do not mean a meaningful conversation or useful interaction will take place in this process. Thus, she argues that instead of purely online courses, they need to be supported with a face-to-face component for maximizing the benefits of networked learning and to minimize the problems.

An interesting finding is the students liked the social interaction in online environment and although they met face-to-face almost each week, most of the responses were that online environment was more supportive for their social relation. One of the determined reasons for the finding was the students felt themselves more comfortable in online discussions because they were not face-to-face and thus the others can not respond against an opinion at the same time. Hew (2006) points on one of the factors that increases knowledge sharing is the respectful environment that people honor others' opinions even if they may not agree with their opinions. In asynchronous online discussions it was perceived that students are more respectful to others' ideas because they are separated in time and do not respond to their faces. Also the study findings of social interaction are correlated with Heckman and Annabi's (2005) findings. They revealed that students' role in the asynchronous discussions were bigger than in the face-to-face discussions in creating the social environment, because the interaction limited by the instructor presence in face-to-face discussion process. But in asynchronous discussions, students respond to each other's ideas instead of only the instructors and refer others by their names. Related to the issue, Daugherty (2005) points on the motivating factors while interacting asynchronously and say "students are motivated when they can create, share, and build upon knowledge and ideas in dialogue with their peers" (p.3). These results revealed students motivated by being the core participants of asynchronous discussions and motivated by responding to each others.

The study results revealed students perceived themselves closer with the course instructor and have warmer relationship in online sessions. For the reasons, several students expressed online environment made them feel equal with the instructor as well as the other students. Correlated with the study results, Smith, Ferguson, and Caris (2001) explain that in online discussions because there is more equality between the students and professor, students feel freer for having intellectual discussions with the instructor. Therefore students may feel more comfortable in having online discussions and this is why they mostly prefer

asynchronous online discussions in the blended courses. Furthermore students explained they liked the ability they have to access any of the documents or information on the Web and liked the flexibility of having anytime contact with others. As detailed blended learning environments have the capabilities of facilitating these conditions. Results showed students felt the information exchange in weekly asynchronous discussions provided a sense of classroom community and connectedness among peers similar to the scheduled face-to-face courses. Students also commented that interactions in weekly discussions promote learning as well. This is supported by Garrison and Kanuka (2004) that the ability to facilitate a community of inquiry makes the blended learning effective because community provides limitless access to information on the Internet.

The Issue of Cooperation: Based on the high quantitative results students perceived cooperative activities supported by the blended environment. Taylor (2002) found that cooperative activities were not extensively used in distance courses due to the nature of the Web classes. It might be resulted that the stressed issue sourced from missing of traditional class activities in Taylor's study solved by blending two modes of instruction and students positively perceived the cooperation in this environment. Throughout the study cooperative learning activities were mostly integrated to the face-to-face component of the blended course. Students worked in pairs or groups in face-to-face class sessions in terms of class activities and also worked usually in pairs during observation hours. Perceptions about the collaborative activities done in practice hours were mostly positive. Students expressed that they benefited of working collaboratively in the practice hours. They highly perceived that discussing with others who have similar backgrounds or having identical perspectives of their profession were the beneficial factors in working cooperatively. Students stated that they liked talking about the students' or mentor teachers' behavior after observation classes with his peers and they perceived that these little discussions made them thinking more on the observation process. Additionally students indicated that knowledge sharing during discussions or peer activities were effective that they shared the unexpected or

underestimated ideas with each other and this developed their perspective. Some students suggested cooperating with other students in different departments or upper grades for discussing about the professional issues and sharing experiences.

All the participants expressed their positive perceptions of the blended learning as an interesting experience for them and perceived cooperative learning was supported and strengthened by communication tools in the blended course. There were complaints about the asynchronous discussion groups were too big thus sometimes the discussions moved from its focal point. Thus students expressed that there are small discussion groups occurred within the large group because some similar ideas centered. The literature also supports small group discussions and Graham et al. (2000) suggest, if the discussion group is too large than there won't be meaningful discussions thus it is better to divide the groups into smaller parts for more productive discussions. It is perceived that the discussions would me more focused by having parallel small group discussions as the literature supports. Although there were large group discussions in the discussions processes of this blended course, results showed natural divisions' occurred. Similar responses grouped under different subheadings naturally during the discussions. These results also suggested the literature which supports small group discussions is more meaningful. Also learners' perceptions support the need of having more little discussion groups would support more efficient cooperative discussions. Experiences showed in a purely traditional face-to-face course, having parallel small group discussions is not an easy way. The complaints about time limitation in face-to-face discussions were a pointed issue by students. As perceived the blended courses eased of having cooperative little group discussions asynchronously. Supporting students' cooperative activities by both face-to-face and online modes perceived as the advantages of the blended designed environments. Keller (1999b) determined that attention problems occur when learners work independently and because in computer-based environments learners do not find the independent work interesting, they may not attend. One of the determined factors students liked about online threaded discussions was about knowledge sharing. Learner expressions

revealed being out of class but sharing something by Web motivated themselves. Thus it might be said that although there is an idea of independence while having forum discussions, students preferred having cooperative activities that feel them more confident.

Active Learning: In accordance with the idea of active learning, it was focused on more learner-centered activities. It was agreed that learning is increased if students actively participate in their courses by discussing and writing about course content (Chickering & Gamson, 1991). Overall, the quantitative and qualitative results showed that although there might be some improvements, majority of the students perceived that the blended environment supported student-centered activities. Students perceived themselves as active participants in their learning and found the environment as student centered. Especially students mostly focused on online and in class discussions, real-life scenarios and video clips as the factors that supported active learning in the blended learning process. Previous research indicated that giving students real-life scenarios to analyze promotes active learning which used in this course (Taylor, 2002).

Results revealed students liked both the online and face-to-face discussions and they perceived the asynchronous online discussions were supportive for learning among students and the instructor. They perceived by having discussions they have a voice in both online and face-to-face modes, and this make them more active in their learning process. Results revealed having asynchronous online discussion was a new experience for students and they perceived this as an enjoyable activity. Also qualitative findings demonstrated that most of them liked having asynchronous online discussions rather than face-to-face in reason for the enjoyment. The idea is correlated with Wu and Hiltz (2003) that they say, in online discussions, students actively participate in the process and they are more dominated because the environment is more active, thus students feel having more fun and enjoy their learning. Although students perceived asynchronous online discussion is fun, the results are so clear that any of the respondents did not want to give over of face-to-face discussions that name as real interaction. As one other

reason, some students pointed that they feel involved more in face-to-face courses thus they could not feel fully online course as a real course if there is not a face-to-face part. Some reasons that students' preference of face-to-face meetings rather than online explored by Meyer (2003) that students liked the "energy" and "benefit from the enthusiasm of others" (p. 61). Also literature stresses on the importance of face-to-face communication in some points even in online courses and research findings suggested that face-to-face communication should be regarded as important issue also to motivate (Buckley, 2003; Johnson & Johnson, 2004). Some students had concerned about the lack of face-to-face contact with other class members and also the instructor in taking an online course (Buckley, 2003). Face-to-face interaction seems necessary for enhancement of and interference with e-learners' motivation (Kikuchi, 2006). One other reason might be because the students are juniors, thus they did not have much experience with technological ways of instruction. According to Ropp's (1989) review of literature, most research concluded that the less experience people had with computers, the more anxiety they exhibited about technology.

Additionally students explained that they are interrupted by someone else in the face-to-face classroom while explaining something. Thus, they perceived that during asynchronous online discussions they feel more relaxed and free because it is flexible. Also student comments revealed that their desire to attend the discussions decreased because of the interruptions during face-to-face meetings. Furthermore some participants criticized the time constraints in face-to-face discussions and complaint that only a small number of students can participate actively in-class discussions. This result also clarified by Smith, Ferguson and Caris (2001) that time limitation restricts students during in-class discussions. Also Meyer (2003) points time issue in his study by making a comparison of face-to-face and computer mediated discussions and points the time problem in face-to-face meetings that "the completion time made it difficult to ask for clarification or research to back up an opinion" (p. 61). Also Sloffer, Dueber and Duffy (1999) determined that students realized face-to-face discussions usually less structured

because of the time limitation. In the blended course by the asynchronous online discussion in addition to face-to-face discussions, discussion time expanded to whole time instead of a limited time. Students perceived this expansion allowed them being more active throughout the week in their learning. Also students perceived this enabled having a more equal participation to the discussion processes and draw this up as the advantages of blended courses. Since online discussions allowed equal opportunity for expression as perceived by students, they might lend themselves more naturally to increased participation, especially among those students who are not likely to engage in face-to-face class discussions (Carnevale, 2002; Young, 2002). Another results indicated asynchronous online discussions provide written records from the sessions that students perceived positively, and this might provide students a good resource for other times. Students explained that because face-to-face discussions are usually at the moment conversations it is not easy remembering the details being discussed after a while. Furthermore they agreed that while writing, they have enough time to think and they could be able to delete or rewrite. Thus students might clarify their thinking while writing.

Additionally the international students perceived that having written discussions is more suitable for their learning. They expressed that they were feeling more comfortable in asynchronous online discussions, because they did not afraid of asking inappropriate questions. Also they expressed the comfort that others do not see their facial expressions. The results is correlated with Thompson and Ku's (2005) findings that most Chinese students expressed that they felt comfortable in forum discussions than traditional classroom discussions in a learning environment that they are international students. But incompatible with the study results Jarvela and Hakkinen (2002) stress on the effect of visual information, that it's absence reduces the richness of the social cues available to the participants, increasing the social distance.

It can be said that results showed multiple features of asynchronous online discussions make it very popular among the students. It is because from the design

and development of the course, the main ideas were orienting the course that supports student-centered activities and asynchronous online discussions provide an opportunity to do this. And this is perceived effectively by the participants that take the course in blended setting. This might be a good reason why the participants prefer blended courses more than purely online. Also Czerniewicz (2001) supports this study's findings and argues for getting the maximum benefit from online instruction the course should be supported with face-to-face component and there should be a mix of both learning activities.

Majority of the students perceived blended learning environment enabled a flexibility by being the combination of best features of both classroom instruction with online learning. Uskov (2003) points that the effectiveness of learning affected by the learner's flexibility of time, place and pace. Motiwalla and Tello (2000) reported the students appreciated the flexibility of accessing the Web-based course at anytime and from anywhere. Thus, having the right time and right place is important for the ideal learning environment. As being the combination of best features of both classroom instruction with online learning; blended learning environments enables the flexibility. Students perceived the online part of the blended course enabled being in a flexible environment by responding own time schedules and explained they enjoyed the facility supported by course Web site and online discussions. Also students perceived their independence is supported in the blended course by enabling individual studies and giving opportunity in both online and face-to-face environment to study on the activity. It is supported that asynchronous nature of online courses supports independent learning that requires students to make their own decisions on where and when to do what, and permit students to work at their own pace (Suanpang, Petocz, & Kalceff, 2003). It is agreed that online teaching supports an active and dynamic learning environment (Macdonald, Stodel, Farres, Breithaupt, & Gabriel, 2001). By enabling a blended design, pedagogical strategies included responding learners' convenience and learners' perceptions were mostly positive that the blended design supported and expedited using active learning pedagogy.

Throughout the course to foster a learner-centered environment, real-world activities were selected based on authenticity. Additionally, various media were intended to address a variety of student learning styles. Students agreed on technology's help to redesign a more dynamic learning environment in which they solved real-life problems. They perceived otherwise shy students might become quite active in only electronic forums. Literature supports that people come over shyness through asynchronous discussions and become more active than they are in face-to-face sessions (Cheung & Hew, 2004; Palloff & Pratt, 2001; Vonderwell, 2003). Students were in agreement that real life examples raised their activeness and demand of attendance, and would shed light on the problems in their professional career. Also they pointed that they learned much from others' experiences through the interpretations in the discussions other than books or readings. They perceived the activities activating the learners were much more encouraging. Students' learning is encouraged by seeing what others are doing (Graham, Cagiltay, Craner, Lim & Duffy, 2000). Also students' perceptions about the benefits of working on authentic issues correlated with Carr-Chellman and Duchastel (2000) that they explained threaded discussions lead to powerful learning opportunities that students share real life experiences and learn from others by engaging their work. All of the students found the real life scenarios as useful learning experiences that activated themselves because they have practical benefits. Students perceived using the scenarios make them thinking and using the information they get from readings instead of just memorizing the usual information, and thus preferred scenarios instead of traditional applications. The results demonstrate that scenario-based approach is an effective instructional vehicle that take students on the core and thus make them active participants in their learning journey. The continuity of the scenario-based instructional strategy throughout the online and onsite parts of the blended course seemed to have provided an active learning experience. Also these activities that have multiple solutions such as case studies and real world problems and thus these learning activities are powerful way to motivate students (Daugherty, 2005). Additionally Jacobson and Xu (cited in Daugherty, 2005) found that in ARCS motivational

model active learning methods ranked high among all four dimensions. Therefore, the environment enriched by active learning techniques might be why motivational scores also ranked high in the blended course.

There is positive evidence to use video clips in education (Wang & Hartley, 2003; Knight, Pedersen & Peters, 2004). Students agreed different video clips provided them to visit different classes other that they go in practice hours. They perceived this an encouraging activity that increased their desire to attend the discussions because of making discussions more reliable other than imaginary. Also some students pointed that video clips provided opportunity to be more focused on the issue and impeded repeating the faults done on them.

Feedback: Study results reviewed mostly the students were pleased with feedback from the course instructor. Students perceived that they gathered timely feedback from the course instructor about assignments, observations, and general course requirements and it was supportive. Most of the participants agreed that technology helped in getting responses for their activities. Chizmar and Walbert (1999) agree that technologies' power comes that it supports giving quick and detailed feedback in courses. Thus students' perceptions were positive in reason for the blended course has this power because it combines technology with traditional ways for learning. However students did not perceived the feedback gathered from peers were adequate. There were some complains about delayed feedback of course assistants and feedback from peers. This might be one of the reasons' why feedback principle mean score was under the total perception score. Graham et al. (2000) focus on this issue and focus that peer interaction "help to enrich the learning experience for the students as well as take the responsibility off the instructor for being the only feedback provider" (p.10). Feedback enables a kind of interaction among students or instructors with students, but results showed students were not satisfied with feedback from classmates. One of the determined reasons of low peer feedback was because it is time consuming. Students perceived reading and commenting to other students' works was taking so much time and an extra work. This result is supportive with Ann and Frick's (2006) study students found

computer mediated discussions are taking too much time thus an extra work for them and complained from the low participation of others.

More than half of the students positively perceived the ongoing feedback provided by Web in the blended course. Most of them perceived that Web support promoted getting prompt feedback. Chickering and Ehrmann (1996) point out that technology provides opportunities for evaluating larger amounts of information. Students agreed face-to-face lectures provided giving timely performance feedback. Additionally they perceived as an advantage of e-mails and online forums they got immediate and timely feedback to the assigned homeworks or other activities because they enabled giving feedback before face-to-face meetings. Also students agreed e-mail allowed them getting responses from the instructor or course assistants more promptly than waiting until the next class meeting. The literature agrees that frequent feedback in asynchronous discussions is critical in shaping the discussion process (Shin & Cho, 2003; Hantula, 1998; Jiang & Ting, 1998). If students do not receive an answer to questions within a few days, they lose their feeling of connection and get lost in asynchronous discussions (Markel, 2001). All these ideas correlate to Chickering and Gamson's (1987) fourth good practice principle: "Good practice gives prompt feedback." The study result concurs with Frank, Kurtz and Levin (2002) that they see immediate feedback as the advantage of using technological tools. Students perceived that technology incorporated in the course encourage getting rapid feedback and this made them to be more involved with the material and keep them more focused. "Enhanced communication and lowered barriers of time and place are two previously discussed examples of how Internet and instructional technology promote prompt feedback." (Testa, 2000, p. 9). But some responses inclined that during face-to-face discussions getting immediate response to their speech was faster or body language and expressions that reduce misunderstandings. Blended course provided time and place flexibility by supporting communication as well as ensure the instructor to give ongoing and timely feedback to all the students as perceived by the learners. In addition to personal feedback, the instructor posted weekly feedback to the

whole class about their performance and students perceived this felt them that they were not alone in the learning process.

Students' perceptions were mostly positive about instructor attendance to the discussions. They commented getting feedback from instructors or peers after commenting in the asynchronous discussions make them more active and perceived it as a pushing factor to attend the discussions that increase their desire. Supported by Laurillard (cited in Bunker & Vardi, 2001) in a discussion board, interaction requires an action by the learner, followed by feedback and then a response by the learner. Students perceived getting instructor comments was a supportive reason for their active involvement which increased their desire. Feedback should be supportive and corrective more than just notifying the students of the instructor received the assignments (Batts, Colaric, & McFadden, 2006). Additionally the instructor's choice of making summarizes at the end of each discussion topic in asynchronous forum perceived as a beneficial strategy between students. Regular instructor attendance had also seen as the opportunity that increases the students' confidence and satisfaction and decrease transactional distance (Daugherty, 2005). One other feedback issue positively perceived by students was OMPs. OMPs used to get completely anonymous regular feedback from students and what they are struggling with in the subject. Results showed except two, every student understood why the OMP was being used perceived the application was effective.

Time on Task: The results revealed that students perceived the blended environment supported of tasks being in a timely and scheduled manner. Mostly agreed that technology allowed freedom that is not restricted of time. Based on the study findings, it is clear that learners found the technological support allowed them more time for thinking, discussing, expressing, writing and improvement of their understanding. Students explained that they feel comfortable throughout the learning process and one of the important factor connected with this is the flexible time they had. They pointed technological support allowed them planning their own schedules at the beginning not relative to the assigned time by the instructor or department, thus perceived the time was more effective they spend. Results

revealed some difference with Taylor (2002) and Batts (2005) studies; both found time on task principles having the least mean score between all others. Different results gathered in this study might be because students' perceptions gathered in the blended design. That means the difference might be sourced from the blended designed course instead of the totally online design. Dziuban and Moscal (2001) point that with online learning, students control when, where and what they learn, as well as how often and how quickly and this level of control creates satisfied students. Supported with the results, students perceived that having online control make it easy to planning their own schedules. Also this might be one of the factors that affected students' satisfaction of the blended course positively.

One pointed finding was about having more advanced discussions in the Web environment. Students perceived that asynchronous discussions enabled them having more advanced discussions because they had the enough time to make research on the task before reflecting on the forum. Students pointed that having time to make preparation before writing on forum instead of speaking about thoughts in very short time allow flexible time schedule for and thus prevented time loss. One of the facts that online discussions were more preferred other than face-to-face discussions might possibly be explained by amount of preparation that occurred. Computer based communications allow students to have more time to analyze and reflect on the content and to compose thoughtful responses (Althaus, 1996). Thus students perceived that by enabling the tasks timely, blended designed course promoted to be able to use their own time more efficiently. It is indicated that having sufficient preparation time during asynchronous activities was another advantage for feeling comfortable. The results are in line with those of Ann and Frick (2006), Bonk, Olson, Wisher and Orvis (2002), Heckman and Annabi (2005) and Motteram (2006). In Ann and Frick's study (2006) it is found that students who were on the side of computer mediated communication preferred it because of the flexible time schedule enables more opportunity to think and reflect and additionally students' save time and energy. In this study the students stated similar reasons why they preferred online discussions. Respondents pointed that

asynchronous discussions make them having an opportunity of time to make investigations before reflecting their ideas as supported by similar reasons by Motteram (2006). Bonk, Olson, Wisher and Orvis' (2002) study corroborated with the study findings that blended learning environments would provide advantages of enabling tasks on time because the designs takes the advantage of Web. Additionally probability of making revises without time limitation perceived as one other advantages of having written discussions. Also as pointed, they would be more focused on the tasks by enabling enough time. Meyer (2003) also suggested that in the threaded discussions faculty must give more directives that it is evolved to time. Besides students commented that during asynchronous discussions they are far from noise or interruptions and this might also affect do tasks timely.

The students declared that face-to-face discussions are short thus doing not have enough opportunity to discuss many. Heckman and Annabi (2005) found face-to-face discussions regular and very short although asynchronous dialogs are not linear and continued over seven days. According to learners' reports it was found that learners were not totally pleased with the time of face-to-face discussions and indicated the topics discussed very shortly and thus tenuous. It is clear that, time limits students explaining themselves in face-to-face discussions and this difficulty exceeded by the online discussions in blended design. Thus, although a little number of students complained about the required time and energy for the completion of asynchronous discussion activities, the majority of them preferred these supports their learning process by continuing seven days. This result also supported by the literature (Berge, 1999; Branon & Essex, 2001; Bonk, Malikowski, Angeli, & East, 1998; Smith, Ferguson, & Caris, 2001; Warschauer, 1997). Asynchronous methods are recommended for deeper, more reflective communications (Warschauer, 1997). Bonk, Malikowski, Angeli, and East (1998) discovered that delayed conferencing led to greater depth of discussion and peer responsiveness and Smith, Ferguson and Caris (2001) found that online discussions are both broader and deeper. This might be explained by the fact that students

prefer asynchronous discussions that increases discussion intensity without time limitation.

According to learner reports students liked weekly reminders about assignments or news that were sent with an attempt to inform about upcoming tasks. Students declared their pleasure since instructor posted e-mails to remind students of their upcoming events and due dates, or send an announcement to the Web page. Students particularly appreciated that Web allowed them getting the most current and updated material without time loss. By these points of view students pleased with studying in the blended course that was providing time advantage. As inferred from the learners' comments they found it beneficial and pleasurable to access the most current and global resources, often not even yet available in textbooks or other media that is a great advantage of enriching the course. They perceived having the updated source opportunity was an advantage especially who are mostly interested of being a teacher beyond the coursework.

Students' responses also revealed that they were complainant from the long written messages. Responses inclined that reading long written messages in asynchronous forum discussions was time consuming. They perceived friend's responses were detailed and informative but taking much time to read all long messages and then respond them. Thus they perceived having face-to-face discussions was better to share ideas instead of reading all the long posts and respond them. Students perceived the face-to-face discussions were more practical than online discussions, because it started and finished in a limited time. This result is supporting Wooley (1998) that text-based asynchronous discussions can be overwhelming to students who are expected to read and/or respond to large numbers of messages.

Easy resource sharing was one of the most indicated properties of the blended course that perceived this prevented time loss. Furthermore students declared that the course enabled saving or printing the documents easy and perceived this as one other important advantage that prevent time loss. Most of the

students perceived sharing printed documents during the face-to-face course were another time consuming issue therefore storing in online and getting from course Web site was seen as an advantage and perceived comfortable. Thus, mostly believed the blended mode enhanced timing by using free time actively other than face-to-face lectures. Results supported by Testa (2000), that also agreed instructional time is saved while collecting or distributing the assignments outside the face-to-face class time by technological help.

Expectations: Results identified that students were less clear on their perceptions in the blended course communicated high expectations. Students need stronger guidance about the purpose of the course and how to best engage in them. Quantitative results indicated that students did not find high expectations evident in the blended course. This result is supported by the study carried out by Testa (2000) which examined the respondents were not so clear the "Internet and instructional technologies promoted this principle" (p. 12). The findings revealed that the course activities were not required high standards to complete for the learner. The course was a second semester course and students' first experience about being a teacher. They only took one pedagogical course before taking this course. So, they did not have detailed knowledge of what it requires being a teacher, what are students pedagogical needs, how they need to behave for students' problems etc. During the design of the course, the required activities, readings, assignments were tried to be selected according to students' pre-knowledge. Thus, these were not so detailed because of learners' lacking pedagogical knowledge and this felt students having an engaging but easy course. Most of them agreed the course was not so compelling accept a need to be into whole week. This might be the basic reason why the "expectations" principle was not found evident as other principles in the blended course. The course instructor might not communicate high expectations because students' low background knowledge and thus the students did not need to make extra efforts. Another idea of low mean score of this principle is about the inadequacy of the number of questions about this principle. That means the low clear quantitative results might be sourced

because of the inadequate number of questions examining expectations. Because most of the qualitative responses revealed students' positive perceptions about this principle as explained below.

According to findings students claimed that in practice schools, it was expected to do better lesson plans, create good documents, and support materials for the course because they are active technology users. These teacher expectations were higher than they could be able to in reason for they are using technology actively at university. Students perceived this as one other issue that increased their expectations because they looked for different job opportunities and selected courses at university to respond these expectations of mentor teachers.

According to qualitative learner reports making online discussions was a way that promoted students having high expectations. Students indicated because of the asynchronous discussions away from time limitation, they perceived this gave them the opportunity of deep thinking, and making revisions again and again before writing. It is inferred from the results these provided writing more detailed and improved comments and also expecting better comments from the other students too. One other issue pointed by students that required high expectations was writing comments to a large student group. During asynchronous forum discussions because students writing for a large group of learners, they perceived that they need to write better comments. This finding also resulted by Klass (cited in Chizmar & Walbert, 1999, p. 249) that if students are writing to a larger audience group, in contrast to writing just to the instructor, their writing is substantially improved. Thus, it is clear that students expected better writings from themselves as well as other students in their whole group discussions.

Learners claimed that feeling self confident in the learning environment increased their expectations. Results revealed students felt more self confident during asynchronous discussions because nobody was in the environment and thus they investigate, read, write, delete, and rewrite easily. Simply students perceived

there was less distraction during online discussions. By the way they expect better writings from themselves and also other students in online discussions.

It is also revealed that learners found getting feedback during online or face-to-face discussions from the course instructor was a good motivator for them and increased their desire of doing their best in their learning process. Thus, providing this kind of feedback might increase students' performance in the learning environment. Because the blended environment enabled getting more and easily feedback, this might be increased also student expectations. Graham, Cagiltay, Craner, Lim and Duffy (2000) recommend instructor's providing feedback to improve students' performance and thus increasing their expectations. Results revealed students perceived that by including both online and face-to-face modes, the blended course provided more opportunities to give feedback. Thus the quality of students' responses might be increased.

Diversity in the Learning Environment: Study results revealed more than half of the students perceived that the blended environment supported student diversity by enabling more student involvement in activities. It was indicated that the blended course provided students an array of opportunities for enriching their learning experience by both online and face-to-face supports. According to findings, learners realized flexibility in learning environment as the key point and because each student is unique, thus designing a learning environment that enables different learning activities must be one of the main issues. At this point, students were agreed that the blended course had broadened the opportunities in the learning environment that support different needs of different students. Students perceptions were mostly positive in reason for the blended environment responded diverse students perspectives and different interests taken into consideration.

International students declared the reasons why they were more active in forum discussions as they found writing easier than talking between whole classes. Results revealed international students liked the blended course as it supports both face-to-face and online activities. Some learner responses revealed that not

speaking fluently prevented them engaging in face-to-face discussions and thus, online discussions were the supporter for communication. The result is collaborated by Ann and Frick (2006). They stated that computer mediated discussions enables people who are not fluent English speakers in face-to-face discussions. Communicating with diverse students and giving all students to respond to a topic are the other determined advantages pointed by Brannon and Essex (2001) correlated with the studies that respond diverse student needs. Also Thompson and Ku's (2005) study results support this study's findings about international students' ideas. In that study international students resulted that instead of taking notes in traditional classes due to their insufficient writing and listening skills, Chinese students preferred online courses because everything was in written format and they could easily save these component. Additionally Cornell and Martin (1997) proposed the language issue as one of the causes of motivation problems in the online learning environments. As the results revealed, students perceived taking the course in blended mode was an advantage that enabled different learning opportunities.

Since the blended course has face-to-face component, course materials had produced both for face-to-face and online. Students liked that all the developed course materials (PowerPoint presentations, video clips etc.) and all other documents posted on the course Web site to allow both modes for students to download or print these documents according to their preference. Presenting materials in a range of formats might help students engage with some of the class activities. Results also revealed students positively perceived the reduced time spend on sharing documents in face-to-face class. Learners also explained that they liked the course documents that stored on the Web site instead of having them printed or getting from the instructor or classmates by CD or flash disk. Keller (1987) suggested that learners stating their requirements clearly as one way to increase confidence, that they will be able to master the material. Thus, by including the printable documents on the Web might be a way that increases

learners' confidence because learners have access to the materials anytime from anywhere.

Small video clips were integrated in the face-to-face lecture parts of the course and results revealed learners had positive perceptions toward the use of these video clips. It was perceived that they liked working by the video clips in reason that they make students more involved in the discussion topics. Students expressed that little demonstrations helped them focusing on the issue. Video clips encourage more personalized instruction (Burge & Roberts, 1998). Burge and Roberts (1998) point out that, video technology backs up lectures, demonstrations, and collaboration by means of additional technologies. The study results indicated that technology support in the lectures produced a more participatory learning. Because students perceived that technological applications attract their attention thus enable having more focused discussions. Also students perceived the technology that enabled them interacting with other students, instructors, or professionals all over the world, thus encourage diversity. Additionally, reaching documents, books, or articles by entering the online university libraries only in seconds was the other positively perceived issue of technology use by students. Students believed technology fostered global learning opportunities and perceived blended course enabled getting easy of these opportunities.

One of the ways to employ multiple teaching approaches was using scenarios in the course discussions. The results showed that using activities related to participants' life helped them to be more involved with the learning process and thus increased their desire and performance on responding questions. Scenario discussions were positively perceived by learners because they were expressed as enjoyable activities and more suitable for their learning. Also as perceived scenarios encouraged thinking and developed students' analytical thinking by motivating themselves. Corroborated with the study findings Rowley, Bunker, and Cole (2002) found that in a blended learning environment adding problem-based learning approaches increased adult learners' performance. In the course process students discussed on the theories and concepts in the face-to-face sessions, while

they usually discussed scenarios in online threaded discussions or vice versa. And sometimes the discussions started in face-to-face class and continued in online sessions. Students perceived the blended mode fostered continuance of discussions in the face-to-face meetings to online environment. Results indicated that designing the course in blended mode enabled making an organization in several alternative ways and students liked having different preferences. Thus mostly were in agreement of having such courses in blended mode.

Design of the Course: It is obvious from the responses provided to design that nearly all learners perceived it much helped to their learning. Results reviewed throughout the blended design students perceived the Web site had very much help to their learning. Most learners perceived that relevance of assignments, course objectives, scheduled dates, quality instructions much helped to their learning. It can obviously infer that students liked the blended design that they noted something would be missing in the design if there was no blend of face-to-face and online components. It might be understood from this saying that learners perceived the combination of face-to-face and online modes as a whole not separable from each other. Also quantitative findings supported this with a high percent (78.7%) preference of taking a blended course again. Scenarios, asynchronous discussions, and authentic activities were the issues students perceived that helped much in their learning.

Usability: Perceptions of learners on the usability of the Web site was good that mostly perceived the Web site was usable that much helped in their learning. The students perceived Web site convenient and explained it was comfortable using such a Web site. One of the assumptions that could support this finding might be because a detailed usability test was done at the beginning of the semester with different users and also real users. After the usability test, required modifications were made and possible problems diminished. Web based online discussions were the most highly responded item, students perceived that had very much help in their learning. Although mostly perceived the use of asynchronous online discussions were usable, but some disagreements about the long written comments

that the system were giving for limitless writing opportunity for each student. This might be prevented by limiting each student's writing with a determined word number for each one. Also navigation of the Web site, links, visual appeal, organization, up-to-date content are other issues that perceived much helped in students' learning. Study results revealed that students were not totally pleased with the technical support they had during the course.

Instructor's role: Although the role of the course instructor in the blended environment was not an investigated issue, learners had some useful comments that needed to be summarized here. Learners' perceptions about the issue were mentioned in other parts and this would be tried to be summarized: Learners vary in their perceptions of the main role of their instructors in the blended course. The determined results were pointed mostly on facilitator or peer roles during online activities. Comments revealed that they need instructor directed presence especially in the online sessions and did not want the instructor only watching their activities silently. One reason might be because the learners were freshmen and this was the first blended course experience in their undergraduate teaching. Students perceived the role of the instructor as a guide in their learning, and a facilitator of the classroom activities. During in class activities learners preferred the instructor not an active element of the discussions, but only want as a director. Especially in asynchronous discussion process the students viewed instructor as facilitator rather than a lecturer. The students pointed that they were more desirable to attend the forum discussions when the instructors also present. The learners were more likely to consider the instructor as a peer. Results correlated by Jiang and Ting's (1998) comments that active participation of the instructor to the discussion process play an important role to increase student participation to these discussions. It is resulted that instructor role satisfies students of their learning and thus motivated them. These results suggested that students expect instructors to play an active role within the asynchronous discussions and they do not have this same level of expectations for the in class discussions.

Students' Preference on Face-to-Face, Online or Blended Mode: Students' preference of taking this course whole in face-to-face, online or blended format was investigated. Majority of the respondents expressed their desire to have a blended form. They rated the blended course more favorably than in their other courses, 78.7% indicated that they would take a similar course. Students' preference increased from 25.5% to 78.7% after their blended course experience. This might be because having an organized learning environment that took good teaching principles and motivational factors on the design process affected learners' perceptions towards system. The results correlated with Motteram's (2006) results that when asked 78% of the teachers expected having a mixed course. Also students named the blended course as an enjoyable experience and this agrees with Frank, Kurtz & Levin (2002) by comparison blended instruction with face-to-face learning as "enjoyable, exciting, fun and overloaded" (p.147). Additionally "overloaded" issue also determined in this study, students perceived the blended course as a very busy learning experience. In several studies different ideas were identified against purely online courses: Buckley's (2003) study revealed that some of the students felt isolated during the online learning experience and expresses a need for some face-to-face lectures. Lack of face-to-face communication and absence of community of people are two of them (Thompson & Ku, 2005). In Thompson and Ku's (2005) study any of the international students seemed to enjoy taking a class that was fully online. Additionally Graham, Cagiltay, Craner, Lim and Duffy (2000) suggested meeting face-to-face at the beginning of a semester in an online course is a positive strategy for building sense of community which is not easy in a fully online course and they pointed this increases students' "willingness to interact and cooperate with each other online" (p.10). Also in their study they mentioned about both instructors' and students' invitations to have unscheduled face-to-face meetings in the online courses.

Study results revealed students preferred taking blended designed courses instead of just face-to-face or purely online courses. 78.7% learners specified their

choice of getting courses in blended designed mode for their future courses. Learner's choice to participate or not to an activity or enthusiasm to attend in similar task are some measures used to assess motivational level of the learner (Herndon, 1987; Keller, 1983; Tesser & Campell, 1985). In this study after taking a course in blended designed mode, most of the students expressed their desire to take courses is similar formats again. Results revealed that their option is more on the side of getting blended courses and this demonstrates learner's desire to participate in a similar course again and they are demonstrating a level of positive motivation. Also Gabriella (2003) confirms that the use of systematically designed technology-mediated instructional strategies can be an effective and efficient method of improving motivation.

Preference of Online vs. Face-to-Face Discussions: As declared study results revealed that the students felt that they were more active in asynchronous online discussions but they felt that that are comfortable in both of the environments. One of the reasons might be because the class size was a large combined 47 students, thus online discussions might be felt more comfortable. Learner comments indicated that students could not express themselves better in a crowded classroom, because they have limited time in class and in addition everyone could not respond to the face and this might be why they mostly preferred asynchronous online discussions. It was agreed that computer based communications support the students who prefer more thoughtful way after exploring their own ideas rather than giving quick responses (Althaus, 1996). Study findings is not similar to Ann and Frick's (2006) results that students' comfort levels and activeness were asked in face-to-face or computer mediated discussions, and students' preference was more on the level face-to-face discussions in their comfort level and activeness. But results confirmed with Vess's (2005) study conclusions, students preferred asynchronous discussions in a hybrid course for the reasons "no pressure, having much time as needed, anyone watching, no shyness from others, not speaking directly to a face" (p. 362). Additionally in the study although results indicated that students mostly preferred asynchronous online discussions in the blended course,

but they also noted that having only written discussions would not be adequate for them because lacking of face-to-face interaction which students name as "real" interaction. The students who preferred face-to-face discussions perceived that they could get immediate responses to their speech, faster to respond a question or body language and expressions that reduce misunderstandings. The students who were having online discussions had some concerns to attend these discussions about having too much busy work (Buckley, 2003). One other determined negative issue about forum use was misunderstandings. Some responses revealed because text messages are missing of facial expressions, this resulted by misunderstanding of expressions. This might one of the reasons why students do not want to give off face-to-face discussions. Using emoticons more actively which means facial expressions during text-based discussions was the pointed solution by students.

In face-to-face discussions usually the instructor asks the questions and students try to respond those instead of asking and responding each others questions. Students pointed on this issue that student-student interaction was usually not the considered issue in face-to-face discussions because the interaction was between the instructor and them. Students noted that one issue that asynchronous online discussions promoted their activeness in the blended course was because they moved interaction from instructor-student to student-student more taking the learners on the core. These results consistent with Heckman and Annabi 's (2005) and Vess' (2005) findings that students in asynchronous classes more inclined to continue discussions although in face-to-face discussions they tend to answer the instructor's questions not each other, that means student-to-student interactions engendered by asynchronous discussions. Additionally although in face-to-face discussions students responded to the instructor, in asynchronous online discussions most of the responses were to the other students.

5.1.2. Learners' Motivation in the Blended Course

Learners' motivations in the blended course: The second research question examined learner's motivation in the blended course aligned with components of

ARCS. Motivation was measured by the CIS and attention, relevance, confidence, and satisfaction subscores. Each subscores (for Attention, Relevance, Confidence, and Satisfaction) was analyzed by CIS to examine learners' motivation in the blended environment. Results revealed attention, relevance, confidence, and satisfaction subscores revealed significantly higher levels of motivation among students. Total score for ARCS (3.67) and four subscales were calculated by CIS. The scores ranged from higher to lower scores were relevance (3.80), confidence (3.67), satisfaction (3.66) and attention (3.55). The motivational scores found only with the questionnaire and it was not investigated with any other data collection instruments. But the qualitative data included for the first research question also revealed additional data for the motivational issues. Some of these data implied in upper sections and it is summarized below under ARCS each component.

Attention: Responses revealed attention subscale is the least highly rated instructional motivational factor between ARCS dimensions. In a recent study with 100 college students, relevance was determined to be the most important motivational strategy, that they stated it "increase the meaningfulness of instruction by relating it to personal needs" (Means, Jonassen, & Dwyer, 1997, p. 7). It is resulted that asynchronous online discussions motivated students to be more interested on the course and increased their desire to attend the discussions. This might be resulted that in the blended design, online sessions attracted more student attention. Also students expressed their pleasure by the integration between face-to-face and online activities in the blended course. They pointed on the interrelated design of both environments and expressed the connected design increased their desire to participate the course. The asynchronous online discussions that carry on throughout the week and results revealed this continuous base increased their engagement with the course and thus motivated them. Correlated with the findings, Warren (2000) found that when students perceived the online component of a face-to-face course is optional, unimportant or cannot see its relationship with the rest of the course, then their motivation to participate will be low. Whether in an

electronic or traditional classroom, having discussions and relating material to what they already know, motivates students and enhances their learning (Cason, 1993).

Relevance: Analysis of the responses identified relevance subscale is the most highly rated instructional motivational factor between ARCS dimensions. In a study done with a hundred college students, relevance was determined to be the most important motivational strategy (Means, Jonassen, & Dwyer, 1997) and the researchers stated that "relevance strategies increase the meaningfulness of instruction by relating it to personal needs" (p. 7). Most of the students perceived that what they had learned in this course would be useful in their future life and the course related with their expectations. As Keller (1999b) agreed the level of relevance in instruction differ as a result of learner's background and personal interests and application is needed to promote learning by utilizing students' prior knowledge and making sure that personal connections to the course content are made. Results revealed the examples, scenarios, video clips, and activities were all relevant to the students' present and future expectations in their education and profession, thus increased the relevance of the content. Students had higher levels of motivation when they were given instruction that was relevant to them (Herndon, 1997). Throughout the blended course both online and face-to-face environments were used to increase relevance of the content to learner's educational needs. Responses revealed having the blend of online and face-to-face environments was a way that enhanced students' choice of learning possibilities.

It is suggested by Miltiadou and Savenye (2003) that instructors should find relevant course contents to encourage students having a valuable learning environment. Students agreed that working on real-life scenarios were valuable for their understanding because these were authentic and thus directly telling from themselves. They considered the scenario-based learning as a meaningful learning experience. Mostly pleased because the scenarios used in the course might show the way to their future profession. This usefulness strategy correlated with relevance strategies embedded in the instruction. A group of learners perceived the instruction was useful because directly relevant with future life. Thus, results

showed students motivated by having relevant content activities. If the content of the instruction is perceived to be helpful in accomplishing important goals in student's future profession, then students more likely to learn (Ames & Ames, 1989). Similar results found by Herndon (1987), that students performed higher levels of motivation when they were given instruction relevant to them. Additionally, working with authentic tasks support engagement by creating curiosity and social context creates a pressure to persevere (doing well on assignments) (Carr-Chellman & Duchastel, 2000). Results showed that students pointed on the importance of doing well in the course to accomplish their goals and thus increased relevance.

Confidence: Analysis of the responses identified confidence subscale is the second most highly rated instructional motivational factor between ARCS dimensions. Students pleased with getting all the course documents stored on the Web site in a well organized manner. As they declared it was easy to get the schedule, readings, assignments and discussion topics on the Web. A well designed course helps students to be successful and may decrease their anxiety and thus instructor's help is important in students' effort to control their own pace (Miltiadou & Savenye, 2003). Because as perceived the blended course partly enabled learners to work on their preferences, this might be one of the reasons that they agreed the course was confident.

Keller (1999b) pointed that because all learners do not have the same opportunity to develop confidence in online courses, they need to know what is expected from them during the course process. As one of the GPP includes expectations principle and the blended course design included this principle, students' confidence might be affected from this positively. Additionally, at the beginning of the blended course students had the opportunity of having online discussions for being accustomed of the environment. This might be one of the reasons that positively effect students feeling confident throughout the course. One more issue that should be focused is about feedback. Students agreed that getting feedback felt hem more confident and increased motivation. The blended course

supported getting easy, quick and timely feedback because both the face-to-face and online modes used to give feedback. It might be resulted that by supporting the feedback issue, blended courses also affected students feeling confident in their learning. Also the correlational results revealed that a significant correlation occurred between confidence and feedback.

Satisfaction*:* Analysis of the responses identified satisfaction subscale is the third highly rated instructional motivational factor between ARCS dimensions. Satisfaction relates the perceptions of being able to achieve success and feelings about the achieved outcomes (Keller, 1983). Results revealed that students satisfied with the blended learning environment. In the asynchronous discussion process students were more active and shared knowledge with their peers. Results showed that students enjoyed sharing experiences and different knowledge with the other students in the classroom and this motivated themselves. Similar result found in Wu and Hiltz's (2003) study that through the online discussions, half of the respondents were motivated by and enjoyed sharing knowledge with their peers. Also results showed that students satisfied with the Web supported part of the blended course because it provided flexibility. Literature supports this finding (Beatty & Mortera-Guiterrez, 2000; Enockson, 1997). Results supported Enockson (1997) he found that in a distance course students were satisfied with online instruction because it provided flexibility to their learning requirements and expectations. Also nearly 68% of students were satisfied or very satisfied with using Web as the primary source of course materials (Beatty & Mortera-Guiterrez, 2000). Similarly Johanson (1996) concluded that based on her study findings students' satisfaction is positively impacted when there is a reasonable level of flexibility.

Learners' motivations for the course Web site: Research question three examined learners' motivations for the course Web site aligned with components of ARCS. Motivations toward the course Web site was measured by the IMMS and their attention, relevance, confidence, and satisfaction subscores. Each subscores (for Attention, Relevance, Confidence, and Satisfaction) was analyzed by IMMS

that examine learners' motivation for the course Web site. Results revealed attention, relevance, confidence and satisfaction subscores revealed significantly higher levels of motivation among students. Total mean score for ARCS (3.65) and four subscales were calculated by IMMS. The ranking from higher to lower scores were confidence (3.81), relevance (3.76), satisfaction (3.52) and attention (3.52). The sequence of confidence and relevance subscores differed form the statistical results gathered about students' motivation toward the blended environment. CIS and IMMS results showed a difference only within the confidence and satisfaction subscales. Although confidence ranked second and satisfaction third in the CIS, satisfaction ranked second and confidence third in IMMS survey.

5.1.3. Relationships between Perceptions and Motivation

Correlational Discussion: The fourth research question examined whether there were relationship between learners' perceptions and motivations. In the study correlational analysis was conducted including the motivational variables. Relationships were found between attention and total motivation (r= .79), relevance and total motivation (r= .82), confidence and total motivation (r= .79), and satisfaction and total motivation (r= .86). Satisfaction (r= .86) variable is the one with the strongest relationship to total motivation between the ARCS subscales. The findings support a link between satisfaction and total motivational levels and imply that learners' feelings of satisfaction in regard to motivation are strong. When the learners satisfied with their instruction, they are also motivated. Furthermore, because there is a strong link between satisfaction and motivational level of students then learner's feelings of satisfaction influence their motivation. Between ARCS four subscales, relevance (r= .82) has the second closest relationship with total motivation score, and attention and confidence are in the third order with same points (r= .79) in strong relationship with total motivation of students in the blended course. This result supports with Keller (1987) that all of the dimensions must be met by the learner to be motivated. Since the satisfaction variable correlated the highest of all the motivational subscales with total motivation, satisfaction is the strongest and most influential subscale of the ARCS.

Results have some difference with Babe's (2005) study that he found relevance has the strongest and satisfaction as the second strongest relationship with total ARCS score. There are also significant relationships found between all other variables attention with relevance, confidence and satisfaction; relevance with three others, confidence with three other variables and satisfaction with three other variables too. It might be considered that each subgroup have also affected by the other subgroups. These findings support that each subgroup of ARCS are in a relation and each motivation subgroups are dependently affect learners' motivation in a learning environment.

It is investigated if there is a relationship between student motivation and perceptions in the blended environment. In the total motivation and perception scores, it is clarified that a significant relationship found between the two. Additionally, when the motivation dimensions and each perception principles investigated individually, eleven significant relationships are calculated. There are significant relationships found between total motivation score with respect diverse talents and ways of learning, design, and usability. Similar to total motivation score, results revealed significant relationships of attention subscore with respect diverse talents and ways of learning, design, and usability. Results revealed that learners' motivations mostly affected from the design of the learning environment, usability of the used materials and also different learning activities that addressed different student needs affected motivation too. The significant relationship between motivation and design might be considered as important issue in designing the instructional environments that means design is important to have motivated learners. That can be resulted if the design is poor, then the motivation would not be very good. Students admitted that they did not have problems with instructions on the Web site and procedures on face-to-face lectures and results revealed students were mostly perceived the design of the blended course helped much in their learning. Their positive perceptions of the design might be influenced their motivation toward the whole course. Also the data remarked that usability had the highest correlational score with total motivation between all other perception

subgroups. As students declared, the continuity of the face-to-face lectures by the Web was encouraging. Students felt using the Web site was comfortable because it is user friendly. Also locating all course related information on the Web and anytime having up to date documents were other encouraging factors students. Easy navigation was other positively perceived usability factor toward the Web site. Detailed usability tests were done to the course Web site before the semester had begun and many seen misunderstood factors were recovered. This might be the reason of the highest correlation of usability and motivation.

One more significant relationship found between confidence dimension and feedback. It was noticed from the discussion thread documents that students begin to post more messages to the asynchronous forum environment and respond more when they get an answer from their classmates or the instructor related to their posted messages. Keller (1999a) argues that learner motivation can be affected by external factors including encouragement and support by instructors, tutors, or peers. This research study confirmed that getting support from others about how well they were doing in the course felt them more confident in the course. Also interview responses supported that getting feedback from peers or instructor during discussion periods or assignments were found to contribute to students about feeling confident in either face-to-face or online activities. Moreover results revealed that during online activities learners needed more instructor support as they were alone and away from the other students as well as the instructor to feel them more comfortable in the learning design.

Last significant relationships were between satisfaction with feedback, satisfaction with time on task and satisfaction with usability. Being satisfied with the learning environment found to be directly correlated with getting feedback about the learning activities. Keller (1987) suggested providing "motivational feedback immediately after following task performance" (p.5) that increase the learner's satisfaction. Results revealed most of the students' positive comments about asynchronous discussions were about the way they were having discussions. Students positively perceived having discussions with the ill-structured scenarios

that they are authentic and directly correlated with their life. The structure of weekly discussions also contributed to satisfaction with information exchange in weekly discussions (Vonderwall, 2003). Students felt that getting instructor's and other class members comments about their activities and/or ideas helped them to have more insertion and as the result being more satisfied with the learning environment. As noticed in the students' comments the interactions between students in online environment as well as face-to-face classroom, and students' and instructor's comments in the weekly discussions promote their learning by having an information exchange. Also students perceived that technology supported to plan their own schedules, thus blended design gave them a kind of control for creating their own learning. The result might be a supporter of the correlation between time on task with satisfaction that students satisfied by having control on planning time. Results supported by Dziuban and Moscal (2001) that online learning gives students control when, where and what they learn, as well as how often and how quickly and this level of control creates satisfied students.

It was interesting that although relevance had the highest mean score between other motivational scores in CIS, there were no significant correlations found between relevance subscale and any other perception dimensions. Additionally student-faculty contact, cooperation, active learning, and expectations were the perception dimensions that have any significant relationships with motivation. In a study cooperative works positive effect was found on motivation and also technologies' support to the cooperative learning was also determined (Nichols, 1996). In this study there is not a significant relationship found between motivation and cooperation as Nichols (1996) found. This might be because instead of the online sessions, cooperative activities were integrated in face-to-face sessions and practice hours. Thus cooperative activities were not totally supported by technology. Additionally if the instructors have more interaction with the instructor, then higher level of student motivation would be gathered (Russell, 1997). However, in this study although students highly perceived that student-

instructor interaction is supported in the blended course, there is not a significant correlation found between motivation and the principle of student-faculty contact.

5.2. Conclusion

This study sought to determine how students perceive the blended learning experience from the structure of good teaching practice and ARCS motivational model. The data collection instruments yielded a high response rate from the learners. In general, the responses are positive and the students felt that the blended environment was very useful. Most of the findings of the study were relevant and support the information in literature. Many factors could be the reason for the positive views of students' positive perceptions of the blended environment. Although it was a new design and the instructor was not so experienced, student feedback gathered in each phase of the design process and the course redesigned several times with modifications gathered from learner comments. Students get the course in their second semester at university level and mostly pointed it was their first course in blended mode. Thus it would be difficult for many of the students to compare the blended learning experience with any other blended courses at undergraduate level. Also these students would have lower learning expectations than more professional students that took second or third blended course. This might be considered as a factor that affects learner's perceptions and motivations positively, because of facing with a new experience and not having the opportunity to compare with other experiences. In fully online courses, learner are usually expected a greater experience in navigating online instruction and also a good experience with the online environment. This might be considered as one of the advantages of the blended course that is not expected from students having a greater experience with online environment, because of the combination of face-to-face and online sessions.

The results of this research enrich and extend our understanding about blended learning environments from the participants' points of view. The Seven Principles of Effective Teaching encouraged the contact between students and

faculty, developed cooperation between students, used active learning strategies, gave prompt feedback, emphasized time on task, communicated high expectations and respected diverse talents and ways of learning. Most of the results showed learners had positive perceptions with good teaching principles and additionally design of the learning environment and usability of the Web site. The results of this study indicated a significant correlation with total perception score and total motivation score of students. This might be resulted that when the learning environment supported by good teaching principles then the students would have a level of motivation.

When looked at each GPP dimensions, the only significant correlation found between respects diverse talents and ways of learning and total motivation score. This might be justified that addressing different learners and different needs would probably affect the level of motivation. They also provide additional evidence that blended courses generate instructors taking diversity factors into consideration easier and accommodate different students' needs in the blended learning environment, thus this affected student motivation too. Also there were significant relationships between design with motivation, and also usability with total motivation. It could be expected that if the instructional design of the course or usability of the Web site is poor, then the motivation would not be very good. Practically the result indicated that learner motivation increased with a good design and usability. In a learning environment it is important to keep the students motivated, and this is the issue in blended environments too. Thus results showed the design of the learning environment, usability of the Web site, and addressing different ways of learning gave students opportunity to make them more interested. The highest significant correlation was between the usability and attendance. This can be justified that the usability of a Web site should be proven because the Web site directly affected learners' attention in the Web-supported course. All the correlational relationships found in the study were small and positive.

The results from this study indicated that students were pleased that blending face-to-face and online sessions would be very useful. Positive comments

centered on students perceptions of the blended course with good teaching practices, design and usability. Results indicated that most of the students found the blended learning experience guided by GPP to be positive, motivational, exciting, challenging, and student centered. The students responded well to the principles and it is implied that might be good to follow these principles in the design of a blended course. The Seven Principles of Effective Instruction used in a blended environment had positive outcomes for students' learning experience.

For many students, taking a course in blended mode was a first experience. Most students with no previous blended learning experiences accustomed to traditional face-to-face instruction and found the blended learning experience to be different. Although there were several students who complained about the difficulty and more time demand of taking the course in blended mode, most of them felt the work load was appropriate. Student responses indicated that many of them had good feelings of taking the course in blended mode. Most of the students who experienced the blended course explained blended mode of the course fits their learning and life styles. It is concluding that blended learning environments provide opportunities not available elsewhere. Students also perceived that they had learned many things on their own with the instructors' guidance and the support of internet. Thus although instructor was not an investigated issue in the blended environment; positive comments revealed that learners had good feelings about the instructor guidance.

Despite the limitations, the findings of the study provide useful data for those attempting to maximize the potential of their learning environments designed in blended mode. These findings suggest that students pleased by the design of a learning environment combined by face-to-face and online methods based on the GPP. One reason might be because the blended courses can broaden the opportunities in a learning environment to support different needs of different students guided by GPP.

Learning through discussions is a fundamental and key aspect of the higher education experience because it supports active learning. It is an interesting outcome, in the blended course both online and face-to-face discussions brought to the foreground. It might be because learners had more control on asynchronous discussions, they hold the online discussions ahead than face-to-face discussions. Also mostly they did not want to give over to face-to-face discussions. It would seem that students have more experience with traditional instruction than blended or online instruction. This might explain one of the reasons students did not want to give over from their accustomed habit of face-to-face discussions. But one of the greatest findings in this study is that the students in the blended learning environment reported a jointly relation between their face-to-face discussions and asynchronous online discussions. Majority of the respondents indicated that the face-to-face discussions also prepared them for online discussions and also online discussions organized them for face-to-face discussions. They pointed that because of this connection, they engaged in both discussion environments and felt more confident. This result may be productive for further research in blended designs. Additionally results revealed that students perceived asynchronous online discussions made possible of having more students-to-student interactions. It is pointed that although in face-to-face discussions students generally tend to respond the instructor's questions, during asynchronous online discussions the discussions continued between each other. Also it was regarded that online discussions was a motivating factor improving the quality of face-to-face discussions. Additionally face-to-face discussions regarded as complementary and preparatory to online discussions. This result may also be productive for other studies on blended learning.

Results revealed students satisfied with the interaction among themselves and by the course instructor. It might be implied that interaction increased by the blended course. Results revealed through asynchronous discussions, the focus went more to the students instead of the instructor. This is because the learners are more on the centre of the discussions, that means students asked questions to others than

the instructor, or respond each other. Also it is perceived that asynchronous discussions supported students' progressive interaction between themselves and with the instructor and enabled to a high-quality conversation. Additionally students mostly liked the social interaction supported by technology because it was found more supportive. One of the findings of the study is most of the students felt themselves more comfortable in asynchronous online discussions because they were not face-to-face. This might be because in online discussions students could not respond others at the same time, because they are separated from each other and thus the conversations are more considerate. Thus it might be said that the asynchronous online discussions can be more formal than face-to-face discussions. One other finding from students' perspective was about the time schedule of the instructors. With an agreement the students liked interaction with the instructor without scheduled office hours. Almost all participants perceived this is the power of having blended designed course.

Peer interaction is one of the requirements of learning designs. Thus, having an interaction among students or instructors with students, feedback is one key issue and important for a two way communication. The study findings revealed although students wanted to get classmates' ideas, they were not entirely satisfied with the feedback from them. This is needed to be improved. As an adaptable tool for blended course assessment, OMPs were included to the course design. OMPs used to get regular feedback from students to improve their classes. The findings suggest that students pleased to use OMPs. Findings revealed students reported that OMPs created a relation between online and face-to-face modes of the blended course.

The learners perceived that the blended course fits their learning styles thus it gave freedom to them because it is mostly fifty fifty. Results revealed that students liked the flexibility provided by blended course. This might be because students could reach the course documents anytime and anywhere they need, also could contact with the other students or instructor. Student perceptions showed that

the blended course was helpful for their learning in terms of having accessible resources without time and place limitation.

Learners were pleased having a course Web site that provided them all the information they needed throughout the semester in an organized manner. Students perceived positively having clear timelines, organized documents, a detailed syllabus and having all time access to these documents. It is an interesting outcome that, students were not motivated to attend volunteer discussion topics. Thus it is implied that asynchronous online discussions should be integrated into the course design otherwise students will not see a need to participate. It was resulted that students did not involved any other topics announced as volunteer participation. All the participation was to the scheduled and threaded discussion topics. One of the reasons might be because getting a good grade from the course. Additionally although there was a help page provided in the Web page, students did not to ask for help from the Web page, instead they prefer asking in face-to-face lectures or in office hours. They might found solving problems easier by face-to-face.

The students perceived the educational benefits of blended learning in terms of flexibility, convenience, more interaction, more active learning opportunities, support different ways of learning, more feedback. In asynchronous part, students liked less distraction and having written records for their all time use. They perceived having asynchronous discussions guided their thinking by providing needed time. Being together but independent of time and place was positively perceived learning experience for students. Also having enough time for giving more investigated and thoughtful responses and thus having opportunity expressing themselves are other positively perceived issues by students. Alternatively they agreed on the timely feedback, and spontaneous dialogue in face-to-face discussions. All these achieved through blended learning environment and students perceived these benefits effectively. It is perceived that the blended environment supported student centered instruction and active learning.

The results of this study contribute our understanding of students' ideas of a blended course based on GPP and ARCS motivational design model. Student responses and comments support that the blended environment guided by the GPP used to successfully promote learning and provide valuable learning experiences for students. Also the high motivation scores revealed, combined with knowledge of Keller's ARCS model of motivational design, designers and instructors are able to enhance the blended instruction with multiple approaches for motivating students. Thus this study confirms that the use of systematically designed technology supported instructional strategies might be an effective and efficient method of improving motivation. Blended course was perceived as a dynamic learning environment that increased active student involvement in the learning process. Thus, the blended course perceived as motivating to students because it might be they actively involved in their learning. Students agreed that Web extended the opportunities of the learning design, made them more active, engaged them and facilitated more interaction. Also one pointed issue was the distinction between online and face-to-face instruction is blurring by the blended instruction.

Students perceived one of the powerful properties of the blended environment that make students stay on the tasks throughout the week instead of only face-to-face lecture hours. At this point asynchronous online discussions had seen as the way of whole time participation. As perceived by the blended designed course students encouraged to spend some time on the online activities instead of the face-to-face lecture hours which improved participation. Study results indicated that by this blended course, undergraduate students accessed the other course Web sites and as they pointed, their interest increased with the other courses that are using Web pages. This is an interesting outcome and it can be concluded that getting a blended designed course changed students' usual habits about other courses. Having a blended course which encouraged using Web and face-to-face modes in the same course might be a supportive factor for students developing a habit of using online support in courses.

5.3. Suggestions for Practitioners

In this section, based on the study findings general recommendations are listed for the practitioners who want to use Chickering and Gamson's (1987) Seven Principles for Good Practice in their blended designs. Recommendations listed on each principle and then general advices provided for the instructors who also moderate the asynchronous online discussions.

Good Practice Encourages Student-Faculty Contact

- Use technology to increase your students' involvement with others.
- Maintain student-instructor interaction by actual and virtual office hours.
    - Determine actual office hours, announce these times to students and be in the office for students' easy access in these hours.
    - Encourage students communicating with the instructor by e-mail or asynchronous forum.
    - Learners feel more comfortable when they feel the instructor is available for assistance anytime. So provide quick response by e-mails.
    - Provide a response policy (i.e. answer e-mail or forum questions in 24 or 48 hours time). This prevents disappointment of students, sourced from not reaching the instructor when needed and provides a kind of confidence toward the instructor.
- Use e-mail messages for tracking students' entity in the course.
    - Contacting by private e-mails asking the reasons for nonparticipation or lost motivates students. This feels students not to be forgotten and getting a kind of encouragement from their instructors.
- Develop social interaction by asynchronous online discussions.
    - The students feel freer to express their ideas during written discussions in reason for they are physically separated. Design

asynchronous discussion activities that develop friendships between class members.

- Open introduction forum topics in the first weeks where students meet each other to develop social interaction.

Good Practice Encourages Cooperation

- Limit instructor participation in asynchronous discussions to increase more student cooperation.
    - Students do not prefer getting response in each of their ideas from the instructor; instead they prefer being a bit free with their classmates.
- Develop discussions that encourage peer interaction because this supports cooperating learners.
- Give students required permissions to open new forum topics to ask each other about the required problems or not well understood issues.
- Remain the discussion groups small to have more efficient cooperative discussions.
    - Discussions can be more focused by having parallel small group discussions.

Good Practice Encourages Active Learning

- Incorporate authentic tasks in order to promote active learning.
    - Selecting discussion topics related to students real life increases student involvement.
    - Assign real-life tasks that students look for the answers in the real context and give them opportunity sharing the findings in virtual discussions.
- Provide different kind of activities (scenarios, video clips, articles etc.) which address more students' active involvement in the course.
    - Video-clips make issues more reliable other than imaginary.
    - Scenarios make thinking the issue from different sides.

- Assign scenario-based activities which have multiple solutions. These activities activate students by thinking instead of just memorizing the usual information.
- Instead of insisting the instructor selected topics, give some kind of flexibility to students in their selections because it is more meaningful to them.
- Give students opportunity to present their works to others in face-to-face class and exhibit them in online environment. Learners like sharing their works with others and also learn by seeing.
- Use asynchronous discussions to increase students' active involvement time.
    - Expanding the discussions to whole week make students being more active by enabling more opportunities to participate because of decreased time limitation, equal opportunities, thinking time etc.
    - International students feel more comfortable with written discussions.

Good Practice Gives Prompt Feedback

- Give timely feedback.
    - Frequent feedback is a critical issue in asynchronous discussions that shape the discussion process.
    - Delayed feedback get students lost in virtual discussions.
- Provide acknowledgement feedback to students.
    - Give acknowledgement feedback by e-mail personally and by forum to a group.
    - Give acknowledgement feedback anytime in face-to-face class by non-verbal cues.
- Support peer feedback.
    - In asynchronous discussions encourage students giving peer feedback by assigning requirement rules or as a grading policy.
- Provide private and group feedbacks both in face-to-face class and online environment.
    - E-mails can be used to give detailed and private feedbacks.
    - Discussion forums can be used to give feedback to whole class.

    - In discussion forums feedbacks can be used to direct the discussions.
    - Each week, send performance feedbacks to whole discussion group which also prevents them feeling alone.
- Provide supportive and informative feedback including various sources or materials.
- Use different strategies to get regular feedback from students.
    - OMPs (One Minute Papers) can be used as a strategy to get student feedback in face-to-face or online environments.

Good Practice Emphasizes Time on Task

- Keep resources available all time access to make students reach any time they need.
    - Allow most current and updated material in the course Web page.
    - Save time by storing documents online instead of printing.
- Extend study time by assigning regular asynchronous discussions with specific deadlines.
- Due dates of assignments should be clearly determined at the beginning to enable students deciding own plans and thus to prevent confusion.
- Allowing students planning their own schedules helps controlling their time accordingly.
- Sending weekly reminders to inform upcoming events by e-mails or an announcement to the course Web page are ways to use time effectively.
- Avoiding the learning environment from noise or interruptions affect doing tasks timely.
- Face-to-face discussions limits attendance because of time limitation, so extend discussions by virtual ones.

Good Practice Communicates High Expectations

- List your expectations on the syllabus and make sure that they are understood.

- List your expectations on the course Web site that students can reach anytime they want to see.
- Positive feedback increases students' motivation and thus helps to increase expectations.
- Exhibiting students work on the course Web site or in class increases attention and students desire to make better.
- Offering long time for investigations to questions' responses make students performing better.
    - Provide required time for getting responses from students. In asynchronous discussions students' expectations are increased because they have required time to respond. So provide opportunities to discuss asynchronously.
- Give more advanced and real-life related assignments to increase students' expectations that guide them searching different opportunities.
    - Provide real-life assignments, because observing the results of their own works in real setting encourage students more to perform better.
    - Increasing the expectations required from students direct them working more and finding different opportunities to respond what is expected from them.

Good Practice Respects Diverse Talents and Ways of Learning

- By providing various methods of learning, instructors should give students different opportunities to show their diverse talents.
- Provide similar activities both in online and face-to-face parts of the blended course to address different learner needs.
- Provide different kind of activities (scenarios discussions, watching and discussing video clips, OMPs, peer discussions etc.) to address more students involvement.
- Allow students selecting their own projects instead of selecting for them.
- Give both written and verbal discussion opportunities.

    - Shy or foreign students mostly engage in written discussions.
- Present course materials in range of formats.
    - Present materials on course Web site allowing both downloadable and printable.

Advices to Instructors (or Moderators) for Asynchronous Discussions

- Assign tasks to make students focus on the discussions.
- Give responsibility to the learners during discussions.
- Support peer feedback in asynchronous discussions. This might be emphasized in syllabus or discussion guidelines at the beginning. Make a determination such as "respond minimum two of your classmates' ideas in each forum subject."
- Incorporate authentic activities that have practical benefits.
- Allow emoticons in online discussions.
- Do not take a side in the discussions.
- Give open-ended questions.
- At the end of the discussion, point on least understood or wrong questions (OMP can be used) and provide a brief summary consisting synthesis of the argument as closure.
- Do not judge different ideas.
- Keep discussion groups small.
- Open a practice topic and give students one or two weeks time for getting accustomed to the environment and discussion process.
- Appreciate students' attendance.
- Provide technical support for discussions.
- Make the weekly threaded discussions a requirement (grade dependent). i.e. every student had to post at least two of classmates.
- Give some kind of feedback on the discussions.
- Students want to feel the instructor's attendance to the discussions. This increases students' desire to attend the discussion process. But prevent being the core person in the discussions.
- Do not evaluate the responses of their length, instead focus on the content.

- Providing different verbal or written incentives increases students' attendance.

5.4. Implications of Practice

The results of this study have several implications for future professional practice. First of all in this study, it is concluded that students had positive perceptions for the blended course guided by Chickering and Gamson's (1997) principles and Keller's ARCS. The study has practical significance for the universities and instructors wishing to implement GPP in their courses and planning to redesign their courses in blended mode. Chickering and Gamson's (1987) principles are evident in face-to-face and online courses and these principles accepted as a guideline to set up the pedagogical process in both face-to-face and online courses too. This study provided evidence that these principles can also be evident in blended courses. Also this study contributes to the understanding of student motivation in a blended course. The literature reviewed the importance of motivation in online and face-to-face courses, but little empirical research found that examine motivation in blended environments. This study used ARCS to enhance the motivational appeal of the blended environment and evidence provided that these steps can be evident in blended designs. Additionally the educators should be aware of the innovative strategies and more actively integrate Web-based technologies in the delivery of courses.

5.5. Suggestions for Future Research Studies

This study provides a foundation for future researchers who want to study on blended learning environments. Similarly, the study revealed students had positive perceptions in a blended environment designed based on GPP and ARCS. Based on the findings and discussions, the following recommendations are offered:

- The results of the study implied, the perceptions of students are mostly positive in the blended learning environment followed by GPP and ARCS steps. It is hoped that the findings not only support the previous research but also add to the literature. It can be implied that there needed to be additional research to understand the reason for positive students' perceptions and motivations

reflected in the study. Despite the positive results there is need for improvement and continued development by good teaching principles and motivational aspects of the blended environment. These results provide course instructors, designers and developers with relevant information to make appropriate changes to accommodate the learning needs of the students.

- It is found that the principle of "contact" had the highest mean score by students. In this study only asynchronous communication modes included the blended course, but also this contact may be improved be by incorporating synchronous discussions in the learning process. "Cooperation" and "time on task" other highly perceived principles in this study. "Cooperation" mostly supported by face-to-face lectures, thus by additional activities in online environment this may be improved. Tracking the frequency of student responses in forum or giving more guidance on activities may improve "time on task principle".
- Although it was perceived positively by learners in blended course, to improve "diversity and ways of learning" a learning style inventory may be applied at the beginning of the semester to all students. Also there may be online and face-to-face activities designed for different learning styles in different modes. "Feedback" and "active learning" were the principles students also perceived positively but there may be some improvements for future studies. Immediacy of online environment may be used more actively for giving feedback to student works by the instructors, course assistants and also peers in the blended course. Sending individual or group feedback options of technology may be used for improved feedback. Being face-to-face thus giving timely feedback opportunity may be used in traditional hours of the blended courses. Having discussions by more real-life scenarios or captured videos from real environments by relating these with past experiences may promote active learning. Also promoting students to write own real-life scenarios and discussing these in online or face-to-face environments with classmates may be an additional issue to support active learning.

- "Expectation" was the least positively perceived principle between all others in the blended environment. Instructors can use this study to consider improvement in this principle. The course instructor, assistants and others related the course (for example researchers, mentor teachers) should be coherent about course requirements and do not baffle students by differences.
- In the research, asynchronous online discussions and e-mail messages were used for the online communication style of the blended course. Learners in the current study had used these forums and e-mails frequently and mostly perceived they were beneficial and benefited from these tools. Additional researchers may also consider synchronous discussions in the study of student perceptions in the blended course, since the use of synchronous media such appears to be increasing in learning designs. It would be interesting to see how students might feel about synchronous discussions in a blended design for formal learning.
- In order to get student perceptions of the blended course, the GPP questionnaire is used and also interviews and documents provided getting additional data. The questionnaire assessed student perceptions of their learning experience related to the seven components of effective learning environments: contact between student and faculty, cooperation, active learning, feedback, time on task, expectations, ways of learning, and with two more issues of the learning design usability. In the questionnaire more items about each principle could enlarge the meaning of each GPP. So, in another research expanding the questions and content of the questionnaire may ensure additional findings.
- A review of the existing literature revealed much discussion of the importance of motivation, but little empirical research that examines motivation in technology-mediated learning environments. The four dimensions of ARCS motivational model have been thoroughly investigated in traditional face-to-face classrooms and in a wide variety of educational disciplines. Very few studies, however, have explored the dimensions in the blended environment. Specifically, this study addresses this gap in the literature. But only quantitative data collected that rated students motivational scores in the blended course. In future studies qualitative

data may help to enlarge the motivational findings by investigating the reasons of the scores.

- Additional research may be conducted to determine with different students or different undergraduate levels. This study focused on student's perceptions in a blended learning environment. Additional studies designed to gather data from instructors' or faculty's point of view would add additional insight. Also collecting some additional data such as student grades would give useful information about relationships with success and principles.

REFERENCES

Ally, M. (2004). Foundations of educational theory for online learning. In Anderson, T., and Elloumi, F (Eds.). *Theory and practice of online learning.* Athabasca, AB, Canada: Athabasca University.

Althaus, S. (1996). *Computer-mediated communication in the university classroom: An experiment with on-line discussions.* Paper presented at the annual meeting of the American Political Science Association.

Alvarez, L. C. G. (2005). *Seven principles of good teaching practice: predictors of perceived learning and satisfaction with online courses.* Unpublished doctoral dissertation, University of Nebraska, Nebraska.

Ames, R., & Ames, C. (1989). *Research on motivation in education: Goals and cognitions.* New York: Academic Press.

An, Y.J., & Frick, T. (2006). Student perceptions of asynchronous computer-mediated communication in face-to-face courses. *Journal of Computer-Mediated Communication, 11*(2), article 5.

Anohina, A. (2005). Analysis of the terminology used in the field of virtual learning. *Educational Technology & Society*, *8*(3), 91-102.

Aydın, S., Selçuk, A., & Yeşilyurt, M. (2007). Okul deneyimi II dersinin öğretmen adayları üzerindeki etkisi (Yüzüncü Yıl Üniversitesi örneği). *Yüzüncü Yıl Üniversitesi, Eğitim Fakültesi Dergisi, 4*(2), 75-90.

Babe, T. S. (1995). *The validation of relevance as an independent dimension of the ARCS motivational model of instructional design*. Unpublished doctoral dissertation, Pennsylvania State University, Pennsylvania.

Bagnert, A. W. (2004). The seven principles of good practice: A framework for evaluating on-line teaching. *Internet and Higher Education, 7,* 217-232.

Baran (2007). *A case study of online communities of practice for teacher education: motivators, barriers and outcomes.* Unpublished doctoral dissertation, Middle East Technical University, Ankara.

Batts, D. (2005). *Perceived agreement between student and instructor on the use of the seven principles for good practice in undergraduate education in online undergraduate education courses*. Unpublished doctoral dissertation, East Carolina University, North Carolina.

Batts, D., Colaric, S. M., & McFadden, C. (2006). Online courses demonstrate use of seven principles. *International Journal of Instructional Technology and Distance Learning*, *3*(12), 15-25.

Beare, P. L. (1989). The comparative effectiveness of videotape, audiotape, and telelecture in delivery of continuing teacher education. *American Journal of Distance Learning 3*, 57-71.

Beatty, P. T., & Mortera-Guiterrez, F. (2000). From research to practice in distance learning education: strategies for fostering faculty development and improving instructional practice. (ERIC Document Reproduction Service No. ED437536)

Berge, Z. L. (2001). *Sustaining distance training: Integrating learning technologies into the fabric of the enterprise*. San Francisco: Jossey-Bass.

Berge, Z.L. (1999). Interaction in post-secondary web-based learning. *Educational Technology, 18*(1), 5-11.

Bleed, R. (2001). A hybrid campus for the new millennium. *Educause Review*, *36*(1), 16-24. Retrieved December 21, 2008, from http://net.educause.edu/ir/library/pdf/erm0110.pdf

Bogdan, R. C., & Biklen, S. K. (1998). *Qualitative research for education: An introduction to theory and methods* (3rd ed.). Boston: Allyn and Bacon.

Bonk, C., Olson, T., Wisher, R. A., & Orvis, K. L. (2002). Learning from focus groups: an examination of blended learning. *Journal of Distance Education*, *17*(3), 97-118.

Bonk, C.J., Malikowski, S., Angeli, C., & East, J. (1998). Web-based case conferencing for preservice teacher education: Electronic discourse from the field. *Journal of Educational Computing Research, 19*(1).

Borland, Jr., K. W., Lockhart, M. S., & Howard, R. D. (2000). Assessing distance teaching and learning. *Academic Exchange Quarterly, 4*(3), 4-14.

Branon, R. F., & Essex, C. (2001). Synchronous and asynchronous communication tools in distance education. *TechTrends. 45*(1), 36-42.

Braxton, J. M., Olsen, D., & Simmons, A. (1998). Affinity disciplines and the use of the principles of good practice for undergraduate education. *Research in Higher Education*, 39(3), 299-318.

Buckley, K. (2003). *How principles of effective online instruction correlate with student perceptions of their learning*. Unpublished doctoral dissertation, University of Central Florida, Florida.

Bullen, M. (1998) Participation and critical thinking in online university distance education. *Journal of Distance Education*, *13*(2), 1-32.

Bunker, A., & Vardi, I. (2001). *Why use the online environment with face to face students? Insights from early adopters*. In proceedings ASCILITE Conference 10-12 December, Melbourne. Retrieved August 13, 2008, from http://www.medfac.unimelb.edu.au/Ascilite2001/pdf/papers/bunkera.pdf

Burge, E. J., & Roberts, J. M. (1998). *Classrooms with a difference: Facilitating learning on the information highway.* Montreal: McGraw-Hill.

Carnevale, D. (2002). Online students don't fare as well as classroom counterparts, study finds. *Chronicle for Higher Education, 48*(27*)*: A38.

Carr-Chellman, A., & Duchastel, P. (2000). The ideal online course. *British Journal of Educational Technology*, *31*(3)*,* 229-241.

Cason, R. (1993). Some (possibly controversial) suggestions for teaching adults. *Financial Practice and Education, 3*(1), 61-64.

Çetin, Ü. (2007). *ARCS motivasyon modeli uyarınca tasarlanmış eğitim yazılımı ile yapılan öğretimle geleneksel öğretimin öğrencilerin başarısı ve öğrenmenin kalıcılığı açısından karşılaştırılması*. Unpublished master's thesis, Gazi University, Ankara, Turkey.

Cheung, W. S., & Hew, K. F. (2004). Evaluating the extent of ill-structured problem solving process among pre-service teachers in an asynchronous online discussion and reflection log learning environment. *Journal of Educational Computing Research*, *30*(3), 197-227.

Chickering, A. W., & Ehrmann, S. C. (1996). Implementing the seven principles: Technology as a lever. *American Association of Higher Education Bulletin*, *49*(2), 3–6.

Chickering, A. W., & Gamson, Z. (1987). Seven principles for good practice in undergraduate education. *American Association of Higher Education Bulletin*, *38*(7) 3-7.

Chickering, A. W., & Gamson, Z. (1991). Applying the seven principles for good practice in undergraduate education. *New Directions for Teaching and Learning, 47*, 63-69.

Chizmar, J. F., & Ostrosky, A. L. (1998). The one-minute paper: Some empirical findings. *Journal of Economic Education*, *29*(1), 3-10.

Chizmar, J. F., & Walbert, M. S. (1999). Web-based learning environments guided by principles of good teaching practices. *Journal of Economic Education, 30*(13), 248-265.

Clark, D. (2001). *Blended learning: An epic white paper.* Retrieved August 5, 2008, from http://epic.co.uk/content/resources/white_papers/Epic_Whtp_blended.pdf

Cornell, R., & Martin, B. L. (1997). The role of motivation in web-based instruction. In B. H. Khan (Ed.) *Web-based instruction*. Englewood Cliffs, NJ: Educational Technology Publications.

Creswell, J. W. (2003). *Research design: Qualitative, quantitative, and mixed methods approaches.* Thousand Oaks, CA: Sage.

Cresswell, J. W. (2005). *Educational research: Planning, conducting and evaluating quantitative and qualitative research*. Upper Saddle River, New Jersey: Prentice Hall.

Cross, K. P., & Angelo, T. A. (1988). *Classroom assessment techniques: A handbook for faculty.* Ann Arbor, MI: National Center for Research to Improve Postsecondary Teaching and Learning, University of Michigan.

Czerniewicz, L. (2001). Reflections on learning online: The hype and the reality. *South African Journal of Higher Education*, *15*(3), 17–23.

Dabbagh, N. (2002). Using a web-based course management tool to support face-to-face instruction. *The Technology Source*. Retrieved December 21, 2008, from http://technologysource.org/article/using_a_webbased_course_management_tool_to_support_facetoface_instruction/

Daugherty, A. (2005). Motivating online information literacy students. *Academic Exchance Quarterly.* Retrieved November 18, 2008 from http://www.thefreelibrary.com/Motivating+online+information+literacy+students.-a0142636433

Daugherty, M., & Funke, B. (1998). University faculty and student perceptions of Web-based instruction. *Journal of Distance Education*, *11*(1), 21-39.

Davran, E. (2006). *İlköğretim kurumlarındaki öğretmenlik uygulamasının öğretmen adaylarının öğretmenlik yeterliliklerini kazanmaları üzerindeki etkisi: Van ili örneği.* Unpublished master's thesis, Yüzüncüyıl University, Van, Turkey.

De Jong, G.M. (2000). *Understanding change and curriculum implementation*. Unpublished doctoral dissertation, University of Alabama, Birmingham.

Dede, Y. (2003). ARCS Motivasyon Modeli'nin öğrencilerin matematiğe yönelik motivasyonlarına etkisi. *Journal of Pamukkale University Faculty of Education*, *2*(14), 173-182.

Denzin, N. K., & Lincoln, Y. S. (1998). *The landscape of qualitative research.* Thousand Oaks, CA: Sage.

Dillenbourg, P. (2000). *Virtual learning environments*. Paper presented at the Workshop on Virtual Learning Environments, Learning in the New Millennium: Building New Education Strategies for Schools. Retrieved December 19, 2008, from http://tecfa.unige.ch/tecfa/publicat/dil-papers-2/Dil.7.5.18.pdf

Dursun, Ö. Ö., & Kuzu. A. (2006). *Öğretmenlik uygulaması dersinde karşılaşılan sorunların öğretmen adaylarının görüşleriyle değerlendirilerek çözüm önerilerinin belirlenmesi.* Paper presented at the 15th National Educational Sciences Conference at Muğla University.

Dziuban, C. D., & Moscal, P. D. (2001). Evaluating distributed learning at metropolitan universities. *Educause Quarterly*, *24*(4), 60-61.

Enockson, J. (1997*). An assessment of an emerging technological delivery for distance education.* Unpublished doctoral dissertation, Northern Arizona University.

Ersoy, H. (2003). *Blending online instruction with traditional instruction in the programming language course: A case study*. Unpublished master's thesis, Middle East Technical University, Ankara, Turkey.

Feng, S. L., & Tuan, H. L. (2005). Using ARCS Model to promote 11th graders' motivation and achievement in learning about acids and bases. *International Journal of Science and Mathematics Education*, *3*, 463–484.

Fleiss, J. L. (1971). Measuring nominal scale agreement among many raters. *Psychlogical Bulletin, 76*(5), 378-382.

Fraenkel, J. R., & Wallen, N. (2000). *How to design and evaluate research in education* (4th ed.). New York: McGraw-Hill.

Frank, M., Kurtz, G., & Levin, N. (2002). Implications of presenting pre-university courses using the blended e-learning approach. *Educational Technology & Society 5*(4), 137-147.

Fredericksen, E., Pickett, A., Pelz, W., Shea, P., & Swan, K. (2000). Student satisfaction and perceived learning with online courses: Principles and examples from the SUNY Learning Network. *Journal of Asynchronous Learning Network*, *14*(2).

Fulford, C. P., & Zhang, S. (1993). Perceptions of interaction: The critical predictors in distance education. *American Journal of Distance Education, 7*(2), 8-21.

Gabriella, D. M. (2003). *The effects of technology-mediated instructional strategies on motivation, performance, and self-directed learning.* Unpublished doctoral dissertation, Florida State University.

Garcia, T., & Pintrich, P. R. (1995). *Assessing students' motivation and learning strategies: The motivated strategies for learning questionnaire*. Paper presented at the annual meeting of the American Educational Research Association, San Francisco, CA.

Garrison, D. R., & Kanuka, H. (2004). Blended learning: Uncovering its transformative potential in higher education. *Internet and Higher Education*,*7*, 95–105.

Gillham, B. (2000). *Case study research methods*. London: Paston Press.

Göktaş, Y. (2006). *The current status of information and communication technologies integration into schools of teacher education and K-12 in Turkey*. Unpublished doctoral dissertation, Middle East Technical University, Ankara.

Grabinger, R. S., & Dunlap, J. C. (2000). Rich environments for active learning: A definition. In D. Squires, G. Conole, & G. Jacobs (Eds.), *The changing face of learning technology* (pp. 8-38). Cardiff: University of Wales.

Graham, C., Cagiltay, K., Lim. B., Craner, J., & Duffy, T. M. (2001). Seven principles of effective teaching: A practical lens for evaluating online courses. *Technology Source*. Retrieved September 7, 2008, from http://ts.mivu.org/default.asp?show=article&id=839

Graham, C., Cagiltay, K., Craner, J., Lim, B., & Duffy, T. M. (2000). Teaching in a web-based distance learning environment: An evaluation summary based on four courses. *Center for Research on Learning and Technology Technical Report No. 13-00.* Retrieved September, 7, 2008 from http://crlt.indiana.edu/publications/crlt00-13.pdf

Green, S. B., Salkind N. J., & Akey, T. M. (2000). *Using SPSS for Windows: Analyzing and understanding data* (2nd ed.). New Jersey: Prentice Hall.

Greene, J. C., & Caracelli, V. J. (1997). Defining and describing the paradigm issue in mixed-method evaluation. In J. C. Greene & V. J. Caracelli (Eds.), *Advances in mixed method evaluation: The challenges and benefits of integrating diverse paradigms* (New Directions for Evaluation, No. 74, pp. 5-17). San Francisco: Jossey-Bass.

Greene, J. C., Caracelli, V. J., & Graham, W. F. (1989). Toward a conceptual framework for mixed-method evaluation design. *Educational Evaluation and Policy Analysis, 11*(3), 255-274.

Gunawardena, C. N., & McIsaac, M.S. (2004). Distance education. In D. Jonassen (Ed.), *The handbook of research on education communications and technology* (2nd ed., pp. 355-395). Mahwah, NJ: Erlbaum

Gürbüz, T., Yıldırım, S., & Özden, M.Y. (2001). A comparison of student teachers' attitudes toward computers in on-line and traditional computer literacy courses: a case study. *Journal of Educational Technology Systems, 29*(3), 259-69.

Güven, İ. (2004). Sosyal bilgiler alan öğretmen adaylarının okul uygulamalarına yönelik görüşleri üzerine nitel bir çalışma. *Kuram ve Uygulamada Eğitim Bilimleri, 4*(2), 273-290.

Hantula, D. (1998). The virtual industrial/organizational psychology class: Learning and teaching in cyberspace in three iterations. *Behavior Research Methods, Instruments, & Computers*, *30*(2), 205-216.

Hazari, S., & Schnorr, D. (1991). Leveraging student feedback to improve teaching in web-based courses. *THE Journal*, *26*(11), 30-38.

Heckman, R., & Annabi, H. (2005). A content analytic comparison of learning processes in online and face-to-face case study discussions. *Journal of Computer Mediated Communication, 10*(2), article 7. Retrieved September 13, 2008 from http://jcmc.indiana.edu/vol10/issue2/ heckman.html

Herndon, J. N. (1987). Learner interests, achievement, and continuing motivation in instruction. *Journal of Instructional Development, 10*(3), 11-14.

Hew, K. F. (2006). *Knowledge sharing among professionals in three online communities*. Unpublished doctoral dissertation, Indiana University, Indiana.

Hill, J. R., Wiley, D., Nelson, L. M., & Han, S. (2004). Exploring research on internet-based learning: From infrastructure to interactions. In D. H. Jonassen (Ed.), *Handbook of Research on Educational Communications and Technology* (pp. 433-460). Mahwah, NJ: Erlbaum.

Hiltz, S. (1994). *The virtual classroom: Learning without limits via computer network.* Norwood, NJ: Ablex Publishing.

Hiltz, S. R., Zhang, Y., & Turoff, M. (2002). Studies of effectiveness of learning networks. In J. Bourne & J. Moore (Eds.), *Elements of Quality Online Education: Volume 3 in the Sloan-C™ Series.* Needham, MA: Sloan-C.

Holmberg, B. (1989). *Theory and practice of distance education*. London: Routledge.

Horton, W. K. (1999). *Designing web-based training: How to teach anyone anything anywhere anytime*. New York: Wiley.

Jarvela, S. & Hakkinen, P. (2002). Web-based cases in teaching and learning the quality of discussions and a stage of perspective taking in asynchronous communication. *Interactive Learning Environments*, *10*(1), 1-22.

Jiang, M., & Ting, E. (1998). *Course design, instruction, and students' online behaviors: A study of instructional variables and student perceptions of online learning.* Paper presented at the annual meeting of the American Educational Research Association, San Diego, CA.

Johnson, B., & Christensen, L. B. (2004). *Educational research: Quantitative, qualitative, and mixed approaches* (2nd ed.). Boston: Allyn & Bacon.

Johnson, D. W., & Johnson, R. T. (2004). Cooperation and the use of technology. In D. H. Jonassen (Ed), *Handbook of research on educational communications and technology.* (pp. 785-812). London, Lawrence Erlbaum Associates.

Jonassen, D. H. (1992). Evaluating constructivist learning. In T. M. Duffy & D. H. Jonassen (Eds.), *Constructivism and the technology of instruction: A conversation* (pp.137-156). Hillsdale, NJ: Erlbaum.

Jonassen, D. H. (1998). Designing constructivist learning environments. In C. M. Reigeluth (Ed*.), Instructional theories and models* (2nd ed.). Mahwah, NJ: Erlbaum.

Jonassen, D. H. (1999). *Learning with technology: A constructivist perspective.* Toronto: Prentice-Hall.

Jonassen, D. H. (2002). Learning to solve problems online. In C. Vrasidas & G. V. Glass (Eds.). Distance Education and Distributed Learning (pp.75-98). Greenwich, CT: Information Age Publishing.

Kearsley, G. (2000). *Online education: Learning and teaching in cyberspace*. Belmont, CA: Wadsworth Thomson Learning.

Keller, J. M. (1979). Motivation and instructional design: A theoretical perspective. *Journal of Instructional Development*, *2*(24), 26-34.

Keller, J. M. (1983). Motivational design of instruction. In C. M. Reigeluth (Ed.), *Instructional design theories and models: An overview of their current status* (pp. 383-433). Hillsdale, NJ: Erlbaum.

Keller, J. M. (1983). Motivational design of instruction. In C. M. Reigeluth (Ed.), *Instructional Design Theories and Models: An Overview of their Current Status*. (pp. 383-433). Hillsdale, NJ: Lawrence Erlbaum Associates.

Keller, J. M. (1987a). Strategies for stimulating the motivation to learn. *Performance and Instruction*, *26*(9), 1-8.

Keller, J. M. (1987b). Development and use of the ARCS model of instructional design. *Journal of Instructional Development*, *10*(3), 2-10.

Keller, J. M. (1987c). The systematic process of motivational design. *Performance and Instruction, 26*(9), 1-8.

Keller, J. M. (1999a). Motivation in cyber learning environments. *International Journal of Educational Technology, 1*(1), 7-30

Keller, J. M. (1999b). Using the ARCS motivational process in computer-based instruction and distance education. *New Directions for Teaching and Learning*, *78*, 39-47.

Keller, J. M. (1999c). Motivational systems. In H. Stolovitch, & E. Keeps (Eds.), *Handbook of human performance technology* (2nd ed.). San Francisco: Jossey Bass.

Keller, J. M. (2006). *Development of two measures of learner motivation.* Unpublished article, sent via personal communication.

Keller, J. M., & Kopp, T. (1987). Application of the ARCS model of motivational design. In C. M. Reigeluth (Ed.), *Instructional theories in action: Lessons illustrating selected theories and models*. Mahwah, NJ: Erlbaum.

Keller, J. M., & Subhiyah, R. (1993). *Course interest survey*. Tallahassee, FL: Instructional Systems Program, Florida State University.

Keller, J. M., & Suzuki, K. (2004). Learner motivation and e-learning design: A multinationally validated process. *Journal of Educational Media, 29*(3), 229-239.

Khan, B. H., (1997). *Web-based instruction*., Englewood Cliffs, NJ: Educational Technology Publications.

Kikuchi, H. (2006). Motivational factors affecting online learning by Japanese MBA students. *Australasian Journal of Educational Technology*, *22*(3), 398-415.

Kim, C. M., & Keller, J. M. (2008). Effects of motivational and volitional email messages (MVEM) with personal messages on undergraduate students' motivation, study habits and achievement. *British Journal of Educational Technology, 39*(1), 36-51.

Kiraz, E. (2003). The impact of supervising teachers: Are they really competent in providing assistance to teacher candidates' proffessional growth? Reflections from Turkey. *Mediterranean Journal of Teacher Educational Studies, 8*(2), 75-93.

Knight, S., Pedersen, S., & Peters, W. (2004). Connecting the university with a professional development school: Pre-service teachers' attitudes toward the use of compressed video. *Journal of Technology and Teacher Education, 12*(1), 139-154.

Kocaman, A., & Özden, M. Y. (2006). *Supporting preservice teachers with asynchronous ill-structured scenarios*. Paper presented at the World Conference on Educational Multimedia, Hypermedia, and Telecommunications. Chesapeake, Virginia.

Kraut, R., Gallagher, J., Fish, R., & Chalfonte, B. (1992). Task requirements and media choice in collaborative writing. *Human-Computer Interaction*, *7*, 375–407.

Kudu, M., R. Özbek, & R. Bindak. (2006). Okul deneyimi I uygulamasına ilişkin öğrenci algıları: Dicle Üniversitesi örneği. *Elektronik Sosyal Bilimler Dergisi, 5*(15).

Kuh, G. D. & Vesper, N. (1997). A comparison of student experiences with good practices in undergraduate education between 1990 and 1994. *The Review of Higher Education, 21*, 43-61.

Kuh, G. D. (1997). Setting the bar high to promote student learning. In G. S. Blimling & E. J. Whitt (Eds.), *Good practice in student affairs: Principles to foster student learning*. San Francisco: Jossey-Bass.

Lang, F. M. (2000) Distance learning: Designing new frontiers. *Dissertation Abstracts International*. (UMI No. 9976885)

Lee, C. Y. (2000). Student motivation in the online learning environment. *Journal of Educational Media & Library Sciences, 37*(4), 367-375.

Lincoln, Y., & Guba, E. G. (1985). *Naturalistic inquiry*. Beverly Hills, CA: Sage.

Lundt, J. C. (2004). Learning for ourselves: A new paradigm for education. *The Futurist Magazine*, November-December.

Lynch, T. (2002). LSU expands distance learning program through online learning. *THE Journal* January, 47-48.

Macdonald, C.J., Stodel, E.J., Farres, L.G., Breithaupt, K., & Gabriel, M.A. (2001). The demand-driven learning model: A framework for web-based learning. *Internet and Higher Education, 4*, 9–30.

Markel, S. L. (2001). Technology and education online discussion forums: It's in the response. *Online Journal of Distance Learning*, *4*, 2.

Marques, O., Woodbury, J., Hsu, S., & Charitos, S. (1998). *Design and development of a hybrid instruction model for a new teaching paradigm.* Paper presented at meeting of Frontiers in Education Conference, Tempe, Arizona.

Martyn, M. (2003). The hybrid online model: Good practice. *Educause Quarterly*, *1*, 18-23.

McCormack, C., & Jones, D. (1998). *Building a web-based education system*. New York: Wiley.

Means, T.B., Jonassen, D.H., & Dwyer, F.M. (1997). Enhancing relevance: Embedded ARCS strategies vs. purpose. *Educational Technology Research and Development, 45*(1), 5-17.

Merriam, S. (1998). *Qualitative research and case study applications in education*. San Francisco: Jossey-Bass Publishers.

Meyer, K. A. (2003). Face-to-face versus threaded discussions: the role of time and higher-order thinking. *Journal of Asynchronous Learning Networks*, *7*(3), 55-65.

Miltiadou, M., & Savenye, W. C. (2003). Applying social cognitive constructs of motivation to enhance student success in online distance education. *AACE Journal*. *11*(1), 78-95.

Moore, M. G. (1989). Three types of instruction. *The American Journal of Distance Education*, *3*(2), 1-6.

Moore, M. G., & Kearsley, G. (1996). *Distance education: A systems view.* Belmont, CA: Wadsworth.

Moore, M. G., & Thompson, M. M. (1997). *The effects of distance learning* (rev. ed.). Penn State University: ACSDE Research Monograph.

Motiwalla, L., & Tello, S. (2000). Distance learning on the Internet: An exploratory study. *The Internet and Higher Education*, 2 (4), 253-264.

Motteram, G. (2006). 'Blended' education and the transformation of teachers: A long-term case study in postgraduate UK Higher Education. *British Journal of Educational Technology*, *37*(1), 17-30.

Mukawa, T. E. (2006). *Meta-analysis of the effectiveness of online instruction in higher education using Chickering and Gamson's Seven Principles for Good Practice.* Unpublished doctoral dissertation, San Francisco.

Navarro, P., & Shoemaker, J. (2000). Performance and perceptions of distance learners in cyberspace. *American Journal of Distance Education*, *14*(2), 15-35.

Newby, T. J., Stepich, D. A., Lehman, J. D., & Russell, J. D. (2006). *Instructional technology for teaching and learning: Designing instruction, integrating computers, and using media* (3rd ed.). Englewood Cliffs, NJ: Prentice-Hall.

Nichols, J.D. (1996). The effects of cooperative learning on student achievement and motivation in a high school geometry class. *Contemporary Educational Psychology* 21.

Nielsen, J. (1994). *Ten usability heuristics*. Retrieved November 11, 2008, from http://www.useit.com/papers/heuristic

Okey, J. R., & Santiago, R. S. (1991). Integrating instructional and motivational design. *Performance Improvement Quarterly*, *4*(2), 11-21.

Olson, T. M., & Wisher, R. A. (2002). The effectiveness of web-based instruction: An initial inquiry. *International Review of Research in Open and Distance Learning*, October.

Osguthorpe, R. T., & Graham, C. R. (2003). Blended learning environments: Definitions and directions. *Quarterly Review of Distance Education*, *4*(3), 227-234.

Özden, M.Y. (2002). *Öğretici tabanlı öğrenmeden internet tabanlı çoklu ortam oluşturmacı yaklaşım uygulamalarına geçiş: Bir durum çalışması.* In proceedings of Bilişim Teknolojileri Işığında Eğitim Konferansı ve Sergisi (pp. 44-50). Retrieved August 17, 2008, from http://guide.ceit.metu.edu.tr/

Palloff, R. M., & Pratt, K. (2001). *Lessons from the cyberspace classroom: The realities of online teaching*. San Francisco, CA: Jossey-Bass Publishers.

Palloff, R., & Pratt, K. (1999). *Building learning communities in cyberspace: Effective strategies for the online classroom*. San Francisco: Jossey-Bass.

Palloff, R., & Pratt, K. (2007). *Building learning communities in cyberspace: Effective strategies for the online classroom*. San Francisco: Jossey-Bass.

Papo, W. (2001). Integration of educational media in higher education large classes. *Educational Media International*, *38*(2–3), 95–99.

Parker, B., & Hankins, J. (2002). AAHE's seven principles for good practice applied to an online literacy course. *JCSC*, *17*, 39-48.

Parker, D., & Gemino, A. (2001). Inside online learning: Comparing conceptual and technique learning: Performance in place-based and ALN format. *Journal of Asynchronous Learning Networks*, *5*(2), 64-74.

Pascarella, E. T. (2001). Identifying excellence in undergraduate education: Are we even close? *Change*, *33*(3), 19–23.

Patton, M. Q. (1990). *Qualitative evaluation and research methods* (2nd ed). Newbury Park, CA: Sage.

Peters, O. (1998). *Learning and teaching in distance education: Analysis and interpretations from an international perspective*. London: Kogan Page.

Picciano, A. G. (2001). *Distance learning: Making connections across virtual space and time.* Upper Saddle River, NJ: Merrill.

Reigeluth, C. M. (1987). *Instructional theories in action: Lessons illustrating selected theories and models*. Hillsdale, NJ: Erlbaum.

Reigeluth, C. M. (1999). What is instructional design theory and how is it changing? In C. M. Reigeluth (Ed.), *Instructional-design theories and models: A new paradigm of instructional theory* (pp. 5–29). Hillsdale, NJ: Erlbaum.

Reinhart, J. (1999). *Student motivation, self-efficacy and task difficulty in web-based instruction*. Unpublished doctoral dissertation, Indiana University.

Relan, B., & Gillani, A. (1997). Incorporating interactivity and multimedia into web-based instruction. In B. H. Khan (Ed.), *Web-based instruction* (pp. 231-237). Englewood Cliffs, NJ: Educational Technology Publications.

Richmond, A. (2003). *The web developer's virtual library*. Retrieved May 13, 2008 from http://wdvl.internet.com/Authoring/Design/

Riffell, S. K., & Sibley, D. C. (2004). Can hybrid course formats increase attendance in undergraduate environmental science courses? *Journal of Natural Resource of Life and Science Education*. Vol.33.

Ritter, M. E., & Lemke, K. A. (2000). Addressing the 'Seven Principles for Good Practice in undergraduate education' with Internet-enhanced education. *Journal of Geography in Higher Education, 24*(1), 100-108.

Rodchua, S. (2003). *The measurement of quality and practices of internet-based distance learning regarding students' perception in the industrial management program at Central Missouri State University*. Unpublished doctoral dissertation, Central Missouri State University.

Ropp, M. M. (1999). Exploring individual characteristics associated with learning to use computers in preservice teacher preparation. *Journal of Research on computing in Education*, *31*(4), 402-425.

Rosenberg, M. J. (2001). *E-learning*. New York: McGraw Hill.

Rovai, A. P., & Jordan, H. M. (2004). Blended learning and sense of community: A comparative analysis with tradition and fully online graduate course. *International Review of Research in Open and Distance Learning*, *5*(2).

Rowley, K., Bunker, E., & Cole, D. (2002). Designing the right blend: Combining online and onsite training for optimal results. *Performance Improvement*, *41*(4).

Russell, T. L. (1997). Technology wars: Winners & losers. *Educom Review, 32*(2).

Schank, R. C. (1993/1994). Goal-based scenarios: A radical look at education. *The Journal of Learning Sciences*, *3*, 429-453.

Schutte, J. (1997). *Virtual teaching in higher education*. Retrieved June 2008 from http://www.csun.edu/sociology/virexp.htm

Senge, P. (1994). *The fifth discipline: The art and practice of the learning organization*. New York: Doubleday Publishing.

Shea, P. J., Frederickson, E. E., Pickett, A. M., & Pelz, W. E. (2003). A follow-up investigation of "teaching presence" in the SUNY Learning Network. *Journal of Asynchronous Learning Networks*, *7*(2), 61-80.

Shellnut, B., Knowlton, A., & Savage, T. (1999). Applying the ARCS Model to the design and development of computer-based modules for manufacturing engineering education. *Educational Technology Research & Development, 47*(2), 100-110.

Shin, S., & Cho, E. (2003). The culturally situated process of knowledge production in a virtual community: A case of hypertext analysis from a university's class web discussion boards. *Current Issues in Comparative Education*, *6*(1).

Sloffer, S. J., Dueber, B., & Duffy, T. M. (1999). Using asynchronous conferencing to promote critical thinking: Two implications in higher education. *CRLT Technical Report, 8*(99). Bloomington, IN: Center for Research on Learning and Technology, Indiana University.

Smith, G. G., Ferguson, G., & Caris, M. (2001). Teaching college courses online versus face-to-face. *T.H.E. Journal*, *28*(9). Retrieved August 9, 2008, from http://www.thejournal.com/articles/15358

Song, S. H. (1998). *The effects of motivationally adaptive computer-assisted instruction developed through the ARCS model.* Unpublished doctoral dissertation, Florida State University.

Sprague, D. (2006). Research agenda for online teacher professional development. *Journal of Technology and Teacher Education, 14(4),* 657-661.

Stoudt, K. J. (2006). *The instructional use and effectiveness of WebCT in higher education: student perceptions based on Chickering and Gamson's Seven Principles for Good Practice in undergraduate education*. Unpublished doctoral dissertation, Wilmington College.

Suanpang, P., Petocz, P., & Kalceff, W. (2004). Student attitudes to learning business statistics: comparison of online and traditional methods. *Educational Technology & Society*, *7*(3), 9-20.

Suzuki, K., & Keller, J. M. (1996). *Creation and cross cultural validation of an ARCS motivational design matrix.* Paper presented at the Annual Meeting of the Japanese Association for Educational Technology, Kanazawa, Japan.

Swan, K., Shea, P., Fredericksen, E., Pickett, A., Pelz, W., & Maher, G. (2000). Building knowledge building communities: Consistencies, contact and communication in the virtual classroom. *Journal of Educational Computing Research*, *23*(4), 359-383.

Tait, B. (1997). *Constructive internet based learning*. Retrieved December 21, 2008, from http://homepages.uel.ac.uk/W.H.Tait/Learning/Cibl.htm

Tashakkori, A., & Teddlie, C. (1998). Mixed methodology: Combining qualitative and quantitative approaches. *Applied Social Research Methods*, *46*. Thousand Oaks, CA: Sage.

Tashakkori, A., & Teddlie, C. (2002). (Eds.). (2002). Handbook of mixed methods in social and behavioral research. Thousand Oaks, CA: Sage.

Taylor, J. (2002). *The use of principles for good practice in undergraduate distance education.* Blacksburg, VA: Virginia Polytechnic Institute and State University.

Tessor, A., & Campell, J. (1985). A self-evaluation maintenance model of student motivation. In R. Ames, & C. Ames, (Eds.). *Research on Motivation in Education: Student Motivation*. (pp. 217-248). New York: Academic Press.

Testa, A. M. (2000). Seven principles for good practice in teaching and technology. In R. A. Cole (Ed*.), Issues in Web-based pedagogy* (pp. 237-244). West Port, Connecticut: Greenwood Press.

Thompson, L., & Ku, H. Y. (2005). Chinese graduate students' experiences and attitudes toward online learning. *Educational Media International*, *42*(1), 33-47.

Tuckman, B.W. (2002). Evaluating ADAPT: A hybrid instructional model combining web-based and classroom components. *Computer & Education*, *39*, 261–269.

Üçgül, M. (2006). *The impact of computer games on student motivation*. Unpublished master's thesis, Middle East Technical University, Ankara, Turkey.

Uskov, V. (2003). *Student-centered learning in online and blended education on computer information systems.* 33rd Annual Frontiers in Education (FIE03), T4F-22.

Vafa, S. (1999). *Web-based instruction and motivation: Some useful guidelines for educators.* Paper presented at the 10th International Conference of the Society for Information Technology & Teacher Education, San Antonio, Texas.

Van de Ven, M. (2002). Implementing ICT in education faculty-wide. *European Journal of Engineering Education*, *27*(1), 63–76.

Vess (2005). Scholarship of teaching and learning asynchronous discussion and communication patterns in online and hybrid history courses. *Communication Education, 54*(4), 355-364.

Visser, J. (1990). *Enhancing learner motivation in an instructor-facilitated learning context.* Unpublished doctoral dissertation, Florida State University.

Visser, J., & Keller, J. M. (1990). The clinical use of motivational messages: An inquiry into the validity of the ARCS model of motivational design. *Instructional Science, 19*, 467-500.

Visser, L., Plomp, T., & Kuiper, W. (1999). *Development research applied to improve motivation in distance education*. Paper presented at the National Convention of the Association for Educational Communications and Technology, Houston, Texas.

Visser, L., Plomp, T., Amirault, R. J., & Kuiper, W. (2002). Motivating students at a distance: The case of an international audience. *Educational Technology Research and Development*, *50*(2), 94-110.

Vonderwell, S. (2003). An examination of asynchronous communication experiences and perspectives of students in an online course: A case study. *The Internet and Higher Education, 6*(1), 77-90.

Vygotsky, L. (1978). *Mind and society: The development of higher psychological processes.* Cambridge, MA: Harvard University Press.

Wang, J., & Hartley, K. (2003). Video technology as a support for teacher education reform. *Journal of Technology and Teacher Education*, *11*(1), 105-138.

Warren, A. (2000). *OK, retry, abort? Factors affecting the motivation of online students.* Paper presented at ILT Workshop, University of East Anglia Poytechnic.

Williams, J. (2003). Blending into the background. *E-Learning Age Magazine*, 1.

Wlodkowski, R. J. (1999). *Enhancing adult motivation to learn: A comprehensive guide for teaching all adults* (Rev. Ed.). San Francisco: Jossey-Bass

Wolcott, L. L., & Burnham, B.H. (1991). *Tapping into motivation: What adult learners find motivating about distance instruction.* Paper presented at Seventh Annual Conference on Distance Teaching and Learning, Madison, Wisconsin.

Wooley, D. R. (1998). The future of web conferencing. Retrieved November 9, 2003, from http://thinkofit.com/webconf/wcfuture.htm

Woolsey, R., & Rochua, S. (2004). Quality measurement and good practices in web-based distance learning: A case study of the industrial management program at Central Missouri State University. *Journal of Industrial Technology*, *20*(4), 1-9.

Wu, D., & Hiltz, S. R. (2003). *Online discussions and perceived learning.* Ninth Americas Conference on Information Systems.

Yapıcı, Ş., & Yapıcı, M. (2004). Öğretmen adaylarının okul deneyimi I dersine ilişkin görüşleri. *İlköğretim Online, 3*(2).

Young, J. (2002). 'Hybrid' teaching seeks to end the divide between traditional and online instruction. *Chronicle for Higher Education, 48*(28): A33.

Zvacek, S. M. (1991). Effective design for distance education. *TechTrends*, *36*(1), 40-43.

APPENDIX A

COURSE SYLLABUS

MIDDLE EAST TECHNICAL UNIVERSITY

Department of Computer Education & Instructional Technology

CEIT 114 School Experience I

Spring-2006

Fri 12:40 – 14:30 EFC 104

Instructor: Aslihan Kocaman

Course Web Site: http://css.ceit.metu.edu.tr/ceit114/

Course Description

School experience is a course based on observations and discussions. The aim of the course is to give the students an opportunity to observe authentic teaching. During this course the student is introduced to different aspects of teaching and the teaching profession.

The course is offered one day per week for one semester, providing a structured induction into school life. The tasks and activities performed by student-teachers enable them to observe teachers at work and get to know pupils.

Instructor's Goals

Upon completion of this course, you will be able to:

• Have a structured introduction to the teaching and organization of a school.

• Start to achieve professional skills in the computer education (at a level you intend to teach through a structured sequence of teaching experiences).

• Experience the ways in which individual pupils learn and develop, and the differences between individuals.

• Work cooperatively with a number of school teachers, and develop the personal skills needed to work effectively in schools.

• Become familiar with the organization, management and daily routine of a school and the organization and resources of the school.

Apprentice's Goals

1.

2.

3.

4.

Course Schedule

1. Duration of School Experience: The students are required to spend 4 hours per week to perform their duties in the school they are assigned to. This phase starts in the second week of March, and continues till the end of the end of May, depending on each student's assigned schedule.

2.Active student participation is essential in all phases of the course. The work completed at the school will be assessed by the mentor teacher and the task sheets will be assessed by the instructor at the university.

3.Students are required to complete each activity assigned stated below. As you complete each activity by the instructions given in the relevant activity sheet (answer the questions, write notes, evaluations or conclusions, complete schedules,

and other tasks as required) you will write a reflection report. This report should focus on your perceptions, opinions, and expectations regarding your visit to the school that week. Specifically, this reflection report should answer the following questions:

• What did you find significant about your visit to the school that week?

• What are your reactions to that perception or opinion?

One copy of the each report will be send via e-mail to the responsible assistant on the dates stated below.

The following activities are included in School Experience I:

Week 1, 2, 3 : Introduction to the course: plans for the semester

Week 4 : Activity 1: Computer Education department in school and school resources and materials

Week 5, 6 : Activity 2: Observing a Pupil in Class _A pupil's day

Week 7 : Activity 3: Observing the teacher _ A teacher's day

Week 8, 9 : Activity 4: Observing teaching techniques and activities

Week 10 : Activity 5: Observing teacher's questioning skills

Week 11 : Activity 6: Lesson observation (classroom discipline and management)

Week 12 : Activity 7: The School Principal and the whole school issues

Week 13 : Activity 8: Observing the extracurricular activities

Week 14 : Activity 9: Course Feedback

4. The class will meet in determined weeks in order to discuss about the experiences in the school. In the course hour, you will be provided with a summary of your responses for a particular activity and we will discuss the previous week's reports and findings. Additionally, you will be presented with a brief explanation of what is expected from the next activity.

APPENDIX B

STUDENT INTERVIEW GUIDE (FOR PILOT STUDY)

Time of the interview:
Date:
Interviewer:
Interviewee:

Hello, my name is Aslıhan Kocaman. This interview will be conducted to take your opinions and experiences about School Experience II (CEIT 414) course which you take previous semester. As you know this course has two parts one of you spend your time making observations at determined K-12 schools and the other part classroom teaching at universities. In this interview I am especially interested with your experiences that you had at classroom teaching. Because of it is planned to redesign CEIT 414 course; your experiences, recommendations and the problems that you faced will be light the way for my research.

Do not forget that your comments will be kept confidential.

If it is okay with you I will tape our conversation.

Do you have any questions?

Questions

1. How do you feel about the design of School Experience course?
    a. about observation hours?
    b. about classroom teaching?
2. How was your experience on the activities at class hours?
3. How was your motivation in the course?
    a. Did you have enough opportunity to share your thoughts in the class?
    b. Did all your friends have enough opportunity to share their thoughts in the class?
    c. If no, how do you think this sharing could be increased?
4. Approximately you spend two hours for the classroom hour of this course. I want to take your opinions about the adequacy of these hours.
5. Did you ever take a course that is supported with internet applications? Can you tell me how and in what ways internet applications support that course?
6. I know that you had a mail group for this course. For which needs you used this mail group? Which contributions did using email bring to the course?
7. Did you encounter any problems while communicating with the people interested with this course (mentor teacher, other students, instructor at the university, assistants etc.)?
    a. If yes how did you solve this communication problem?
    b. For you how this can be prevented?
8. What is your knowledge about the experiences of other mentor teacher's experiences instead of yours?
9. Did you encounter any problems in the delivery of the course for classes at the university? Can you give some examples?
10. I want to take your suggestions about in which sides CEIT 414 course can be supported with internet applications?
    a. By supporting with internet applications which deficiencies do you think will be eliminated in this course?

Is there any other information that you want to add for this interview useful for me. Thank you.

APPENDIX C

A SAMPLE SCENARIO

AYLİN ÖĞRETMEN

Yeni döneminin başlamasının ardından artık yaklaşık 1 ay geçen Pınar, hem yeni döneme hem de bir öğretmen adayı olarak staj yapma fikrine iyice alışmış durumdaydı. Staj okullarını ve oradaki öğretmenini tanımak amacıyla düzenlenen "ilk tanışma toplantısına" katılmış, oldukça zevk almıştı. Kendisine rehberlik edecek olan öğretmeniyle tanıştığında onu sevmesine rağmen, staj göreceği okulun biraz uzak olması onu biraz endişelendirmişti. Ama buna da bir şekilde alışacağını biliyordu. Hatta bu, kampus dışında güzel bir deneyim olacaktı. İlk tanışma toplantısı sırasında öğretmenliğe uygun olarak kumaş pantolon giyinmişti. Kız arkadaşlarına baktığında çok fark göremese de, sınıftaki erkek arkadaşlarının takım elbise giymelerinin, kravat takmalarının onları ne çok değiştirdiğini düşündü. Hatta tüm hafta boyunca bunu aralarında bir eğlence konusu yapmayı da ihmal etmediler.

Sonunda staj günü geldi ve Pınar ilk stajına gitti. Ders programını önceden yapmasına rağmen, ilk başta okuldaki sınıfını, öğretmenini bulmakta biraz zorlansa da, 25 dakika sonra sınıfındaki yerini almıştı bile. Bu aksaklıkların ilk haftanın sıkıntıları olacağını düşünerek pek umursamadı. Ne de olsa tüm dönem boyunca buraya gelecekti ve her şey düzenli olacaktı. Sınıfına gireceği Aylin Öğretmen ile ders başlamadan konuşmuş; sınıfta nerede oturacağı, nasıl davranması gerektiği konusunda onun fikirlerini almıştı. Hatta tüm hafta boyunca gözlemlemesi gereken aktivite olan "öğrencinin bir günü" konusunu ders web sayfasından indirmiş, Aylin öğretmenle

paylaşmıştı. Buna ek olarak Pınar, gelecek haftanın aktivitesi olan "öğretmenin bir günü" konusuna da bakmış, şimdiden o konuda da gözlemler yapıp, notlar alabileceğini düşünmüştü.

Pınar'ın gözlemi gayet iyi gidiyordu. Kendisine göre ilginç gelen öğrencileri seçmiş onları gözlemlemeye çalışmıştı. Fakat en çok ilgisini çeken olay, ilköğretim 5. sınıfta okuyan Berk Can ile Aylin öğretmen arasında geçen diyalog olmuştu. Çok ses yaptığı, yanındaki arkadaşıyla sürekli konuştuğu gerekçesiyle Berk Can'ı Aylin öğretmen defalarca uyarmasına rağmen bir sonuç alamamıştır. Berk Can yine konuşmaya devam etmiştir. En sonunda dayanamayıp, Berk Can'ın ve yanındaki arkadaşının bilgisayarlarını kapatmış, ders sonuna kadar öylece oturup sadece kendisini dinlemelerini istemiştir.

Der sonu gelip dışarı çıkacakları sırada Berk Can, Aylin öğretmene "öğretmeniiim, size bir hediyem var" diyerek, ekteki resmi vermiştir. Aylin öğretmen gülerek resmi almış, sadece teşekkür etmiştir. Resme baktığında Berk Can'ın elinde bir tenis raketi ile kendisini çizdiğini anlamıştır.

Aylin tüm bu olayları izlemiş, Aylin öğretmenin çok sabırlı davrandığını, kendisi böyle bir olay karşısında (öğrencinin çizdiği resim) hiç de o kadar olumlu olmayacağını düşünmüştür. Fakat ders esnasında Berk Can ve arkadaşını susturmak için bilgisayarlarını kapatmanın hiç de doğru bir yol olmadığını da düşünmüştür. Pınar, kendisini Aylin öğretmenin yerine koyarak, tüm bu süreçte nasıl davranacağını, nasıl davranması gerektiğini düşünmüş, sınıfta dikkat edilmesi, başa çıkılması gereken ne çok unsur olabileceği konusunda endişelenmiştir.

Sorular...

Pınar'ın yerine siz o sınıfta gözlem yaptığınızı düşünün. Aylin öğretmenin davranışı hakkında ne düşünüyorsunuz? Hem sınıfta konuşan öğrencilerin bilgisayarı kapatarak onlara ceza verme, hem de resmi çizildikten sonraki davranışı hakkında iki boyutlu düşünmeniz gerekmektedir. Hangi nedenler ne sonuçlar doğurabilir biçimiyle. Aylin öğretmenin yerine kendinizi koyun. Siz olsanız ne şekilde davranırdınız. Nedenleriyle açıklayın.

APPENDIX D

TASKS FOLLOWED DURING USER TEST

Table D.1 The Tasks Followed by Users in Usability Test

	Tasks	**Number of participants performed the task**
Task-1	Open the PowerPoint slide presentation about "Classroom Communication"	6
Task-2	Assistants are assigned for each student to carry out their observations and reports. Find and open the "student-assistant school list".	11
Task-3	Find the required information about the "Guidelines" for observation hours of School Experience II course.	11
Task-4	In the observation hours, the students had to sign attendance sheets to their mentor teacher and school director. Open the "Attendance Sheet" form.	11
Task-5	Sometimes the students need to contact with the course instructor Aslihan Kocaman, find e-mail address or telephone number of her.	6
Task-6	The students had homework to criticize an article. Find the "guideline" about how they do their article critique.	6
Task-7	Find information about the proportion of "participation and school experience" affects the students' final grade.	6
Task-8	Please write your comments to the discussion topic "Öğrenci-okul sözleşmesi".	6
Task-9	Change your password.	11
Task-10	While writing one of the reports the students may need some information about the report content and the instructor provides some useful sources. Find and open the link named "questioning technique".	6

APPENDIX E

THE ORIGINAL FORM OF INSTRUMENTS

1. CIS-COURSE INTEREST SURVEY (The Original Form)

Instructions

Course Interest Survey

John M. Keller
Florida State University

1. There are 34 statements in this questionnaire. Please think about each statement in relation to the instructional materials you have just studied, and indicate how true it is. Give the answer that truly applies to you, and not what you would like to be true, or what you think others want to hear.
2. Think about each statement by itself and indicate how true it is. Do not be influenced by your answers to other statements.
3. Record your responses on the answer sheet that is provided, and follow any additional instructions that may be provided in regard to the answer sheet that is being used with this survey. Thank you.

Course Interest Survey

John M. Keller
Florida State University

1 (or A) = Not true
2 (or B) = Slightly true
3 (or C) = Moderately true
4 (or D) = Mostly true
5 (or E) = Very true

1. The instructor knows how to make us feel enthusiastic about the subject matter of this course.
2. The things I am learning in this course will be useful to me.
3. I feel confident that I will do well in this course.
4. This class has very little in it that captures my attention.
5. The instructor makes the subject matter of this course seem important.
6. You have to be lucky to get good grades in this course.

7. I have to work too hard to succeed in this course.
8. I do NOT see how the content of this course relates to anything I already know.
9. Whether or not I succeed in this course is up to me.
10. The instructor creates suspense when building up to a point.
11. The subject matter of this course is just too difficult for me.
12. I feel that this course gives me a lot of satisfaction.
13. In this class, I try to set and achieve high standards of excellence.
14. I feel that the grades or other recognition I receive are fair compared to other students.
15. The students in this class seem curious about the subject matter.
16. I enjoy working for this course.
17. It is difficult to predict what grade the instructor will give my assignments.
18. I am pleased with the instructor's evaluations of my work compared to how well I think I have done.
19. I feel satisfied with what I am getting from this course.
20. The content of this course relates to my expectations and goals.
21. The instructor does unusual or surprising things that are interesting.
22. The students actively participate in this class.
23. To accomplish my goals, it is important that I do well in this course.
24. The instructor uses an interesting variety of teaching techniques.
25. I do NOT think I will benefit much from this course.
26. I often daydream while in this class.
27. As I am taking this class, I believe that I can succeed if I try hard enough.
28. The personal benefits of this course are clear to me.
29. My curiosity is often stimulated by the questions asked or the problems given on the subject matter in this class.
30. I find the challenge level in this course to be about right: neither too easy not too hard.
31. I feel rather disappointed with this course.
32. I feel that I get enough recognition of my work in this course by means of grades, comments, or other feedback.
33. The amount of work I have to do is appropriate for this type of course.
34. I get enough feedback to know how well I am doing.

2. IMMS-INSTRUCTIONAL MATERIAL MOTIVATION SURVEY (The Original Form)

Instructions

Instructional Materials Motivation Survey

John M. Keller
Florida State University

1. There are 36 statements in this questionnaire. Please think about each statement in relation to the instructional materials you have just studied, and indicate how true it is. Give the answer that truly applies to you, and not what you would like to be true, or what you think others want to hear.
2. Think about each statement by itself and indicate how true it is. Do not be influenced by your answers to other statements.
3. Record your responses on the answer sheet that is provided, and follow any additional instructions that may be provided in regard to the answer sheet that is being used with this survey. Thank you.

Instructional Materials Motivation Survey

John M. Keller
Florida State University

1 (or A) = Not true
2 (or B) = Slightly true
3 (or C) = Moderately true
4 (or D) = Mostly true
5 (or E) = Very true

1. When I first looked at this lesson, I had the impression that it would be easy for me.
2. There was something interesting at the beginning of this lesson that got my attention.
3. This material was more difficult to understand than I would like for it to be.
4. After reading the introductory information, I felt confident that I knew what I was supposed to learn from this lesson.
5. Completing the exercises in this lesson gave me a satisfying feeling of accomplishment.
6. It is clear to me how the content of this material is related to things I already know.
7. Many of the pages had so much information that it was hard to pick out and remember the important points.
8. These materials are eye-catching.
9. There were stories, pictures, or examples that showed me how this material could be important to some people.
10. Completing this lesson successfully was important to me.
11. The quality of the writing helped to hold my attention.
12. This lesson is so abstract that it was hard to keep my attention on it.
13. As I worked on this lesson, I was confident that I could learn the content.
14. I enjoyed this lesson so much that I would like to know more about this topic.
15. The pages of this lesson look dry and unappealing.
16. The content of this material is relevant to my interests.
17. The way the information is arranged on the pages helped keep my attention.
18. There are explanations or examples of how people use the knowledge in this lesson.
19. The exercises in this lesson were too difficult.
20. This lesson has things that stimulated my curiosity.
21. I really enjoyed studying this lesson.
22. The amount of repetition in this lesson caused me to get bored sometimes.
23. The content and style of writing in this lesson convey the impression that its content is worth

knowing.

24. I learned some things that were surprising or unexpected.
25. After working on this lesson for awhile, I was confident that I would be able to pass a test on it.
26. This lesson was not relevant to my needs because I already knew most of it.
27. The wording of feedback after the exercises, or of other comments in this lesson, helped me feel rewarded for my effort.
28. The variety of reading passages, exercises, illustrations, etc., helped keep my attention on the lesson.
29. The style of writing is boring.
30. I could relate the content of this lesson to things I have seen, done, or thought about in my own life.
31. There are so many words on each page that it is irritating.
32. It felt good to successfully complete this lesson.
33. The content of this lesson will be useful to me.
34. I could not really understand quite a bit of the material in this lesson.
35. The good organization of the content helped me be confident that I would learn this material.
36. It was a pleasure to work on such a well-designed lesson.

APPENDIX F

APPLIED INSTRUMENTS

COURSE INTEREST SURVEY (CIS)

Thank you for taking your time to participate in this research. All of the answers in the questionnare will be used for an educational research and kept confidental. In no way will your responses to the questions affect your grade in the course in which you are currently involved. They will only be used to help us decide on the motivational strategies toward the course.
There are 34 statements in this questionnaire. Please think about each statement in relation to the course and indicate how true it is. Give the answer that truly applies to you, and not what you would like to be true, or what you think others want to hear. Think about each statement by itself and indicate how true it is. Do not be influenced by your answers to other statements.

Prof. Dr. M. Yaşar Özden
Assoc. Prof. Dr. Ercan Kiraz
Res. Asst. Aslıhan Kocaman

Name-surname:

		Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
1.	The instructor knows how to make us feel enthusiastic about the subject matter of this course.					

2.	The things I am learning in this course will be useful to me.					
3.	I feel confident that I will do well in this course.					
4.	This course has very little in it that captures my attention.					
5.	The instructor stresses on the subject matter of this course that seem important.					
6.	You have to be lucky to get good grades in this course.					
7.	I have to work too hard to succeed in this course.					
8.	I do NOT see how the content of this course relates to anything I already know.					
9.	Whether or not I succeed in this course is up to me.					
10.	The instructor creates suspense when building up some points.					
11.	The subject matter of this course is just too difficult for me.					
12.	I feel that this course gives me a lot of satisfaction.					
13.	In this course, I try to set and achieve high standards of excellence.					
14.	I feel that the grades or other recognition I receive are fair (equitable) compared to other students.					
15.	The students in this class seem curious about the subject matter.					
16.	I enjoy working for this course.					
17.	It is difficult to predict what grade the instructor will give to my assignments.					
18.	I am pleased with the instructor's evaluations of my work compared to how well I think I have done.					
19.	I feel satisfied with what I am getting from this course.					
20.	The content of this course relates to my expectations and goals.					
21.	The instructor does unusual things that are interesting.					
22.	The students actively participate in this class.					
23.	To accomplish my goals, it is important that I do well in this course.					
24.	The instructor uses interesting variety of teaching techniques (questioning, direct instruction, scenario based instruction etc.).					
25.	I do NOT think I will benefit much from this course.					
26.	I often daydream while in this course.					
27.	As I am taking this course, I believe that I can succeed if I try hard enough.					
28.	The personal benefits of this course are clear to me.					
29.	My curiosity is often stimulated by the questions asked on the subject matter in this course.					
30.	"I find the challenge level in this course to be about right neither too easy nor too hard					
31.	I feel rather disappointed with this course					
32.	I feel that I get enough recognition of my work in					

	this course by means of grades, comments, or other feedback					
33.	The amount of work I have to do is appropriate for this type of course					
34.	I get enough feedback to know how well I am doing					

INSTRUCTIONAL MATERIAL MOTIVATION SURVEY (IMMS)

Thank you for taking your time to participate in this research. All of the answers in the questionnare will be used for an educational research and kept confidental. In no way will your responses to the questions affect your grade in the course in which you are currently involved. They will only be used to help us decide on the motivational strategies toward the material (course web site) in the course.

There are 33 statements in this questionnaire. Please think about each statement in relation to the course and indicate how true it is. Give the answer that truly applies to you, and not what you would like to be true, or what you think others want to hear. Think about each statement by itself and indicate how true it is. Do not be influenced by your answers to other statements.

Prof. Dr. M. Yaşar Özden
Assoc. Prof. Dr. Ercan Kiraz
Res. Asst. Aslıhan Kocaman

Name-surname:

	Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
1. When I first looked at the course web site, I had the impression that it would be easy for me.					
2. There was something interesting when I first looked at the course web site that got my attention.					
3. The course web site was more difficult to understand than I had expected at the beginning.					
4. After reading the syllabus, I felt confident that I knew what I was supposed to learn.					
5. It is clear to me how the content of the course web site is related to things I already know.					
6. Many of the course pages had so much					

	information that it was hard to pick out and remember the important points.					
7.	The course web site is eye-catching.					
8.	There were discussions, assignments and activities that showed me how the course web site could be important to people who are taking school experience course.					
9.	Completing this lesson successfully was important for me.					
10.	The quality of the writing in the web site helped to hold my attention.					
11.	The course web site is so abstract that it was hard to keep my attention on it.					
12.	As I worked on the course web site, I was confident that I could learn the content.					
13.	I enjoyed the course web site so much that I would like to know more about this topic.					
14.	The design of the course web site looks dry and unappealing.					
15.	The content of the course web site is relevant to my interests.					
16.	The way the information is arranged in the course web site helped to keep my attention for the course content.					
17.	Writing forum messages in the course web site was too difficult.					
18.	The course web site has things that stimulated my curiosity.					
19.	I really enjoyed studying with the course web site.					
20.	The amount of repetition in the course web site caused me to get bored sometimes.					
21.	The content in the course web site convey the impression that its content is worth knowing.					
22.	I learned some things that were surprising or unexpected.					
23.	The course web site was not relevant to my needs because I already knew most of it.					
24.	The feedback after the activities or of other comments in this lesson (forum, class environment etc.) helped me feel rewarded for my effort.					
25.	The variety of announcements, reports, activities, course scenarios etc., helped keep my attention in web site.					
26.	The style of writing in forum is boring.					
27.	I could relate some of the content of the course web site to things I have seen, done, or thought about in my own life.					
28.	There are so many annoying words on each web page.					
29.	It felt good to successfully complete this lesson.					
30.	The content of the course web site is useful to me.					

31. I could not really understand quite a bit of the material in the course web site.					
32. The good organization of the content helped me to be confident that I would learn.					
33. It was a pleasure to work on such a well-designed web site.					

APPENDIX G

PERCEPTION SURVEY FOR CEIT 114 COURSE

Thank you for taking your time to participate in this research. All of the answers in the questionnare will be used for an educational research and kept confidental. Please think about each statement in relation to the course and indicate how true it is. Give the answer that truly applies to you, and not what you would like to be true.

Prof. Dr. M. Yaşar Özden
Assoc. Prof. Dr. Ercan Kiraz
Res. Asst. Aslıhan Kocaman

Part I: Demographic Info

Age: Gender:

School of graduation: …state high school …anatolian/science …vocational (technical) …vocational (teacher training) …others

If given the choice for this course, I would prefer:

…….. Face-to-face …….. Online …….. Blended (both face to face and online)

Please specify your Internet access points in order (Give numbers 1, 2, 3, 4, 5 in each point you access)

…….. School …….. Home Computer ..…. Dormitory

…….. Friend's Computer …….. Internet Cafe

Part II: Please select the category that best represents your perception of each item:

	Very Often	Often	Sometimes	Rarely	Never	Not Applicable
My instructor served as a mentor/advisor.						
My instructor shared his/her past experiences with me in the course.						
My instructor encourages me to attend professional meetings and events in my field.						
My instructor is available for assistance throughout the course (electronic office hours, e-mail, discussion rooms).						
My instructor provides guidance and information that deals with technical problems or concerns related to the course.						
My instructor encouraged me to discuss key concepts with other students whose backgrounds and viewpoints are different from my own.						
The instructor encouraged me to collaborate on projects and form a learning community and/or workgroup.						
I was asked to give opinions, reactions, opposing views, and/or thoughts regarding other students work.						
It was encouraged me to relate personal and professional events and activities to the course subjects.						
It was asked me to undertake research or an independent study project.						
It was encouraged me to suggest new readings, research projects, field trips, or other course activities.						
I take the responsibility for my own learning.						
I received timely feedback from the instructor.						
I received timely feedback from the other students.						
The feedback was valuable, relevant, and helpful.						
The course expectations were clearly communicated at the beginning of the semester.						
The instructor helped me set challenging goals for my learning.						
The instructor helped me to understand the importance of sound self-pacing and scheduling for the course.						
Assignments and projects were useful and relevant.						

Assignments and projects required high standards for me to complete.						
It was employed multiple teaching approaches in the assignments to accommodate different learner characteristics and styles.						
Selected readings and designed projects/activities that related to my background.						
The instructor understood diverse student perspectives, explanations, culture, and interests.						

Part III: Please select the category that best represents your perception of each item.

How helpful were the followings to your learning?	**Very Much Help**	**Much Help**	**Moderate Help**	**A Little Help**	**No Help**
The course web site					
The face-to-face lectures					
The assignments					
The course objectives					
Improve your electronic learning skills					
Scheduled dates to complete assignments					
Quality of written instructions					
Procedures to complete activities/assignments					
Relevance of the assignments to your educational goals					
Profession and other aspects of your life					

How much help did the following give you in regards to your learning?	**Very Much Help**	**Much Help**	**Moderate Help**	**A Little Help**	**No Help**
Navigation of the course site					
Relevant links					
Locating information within the course					
Visual appeal of the course					
Organization of information					
Use of discussions in forum					
Start up information found on course homepage					
Up-to-date course content					
Support for dealing with technical problems					
Information on technical requirements for taking web course					
Information on how to be successful in online environment					

Part IV: The next section gives you the opportunity to express how you feel about the course, web-based instruction and your learning experience.

	List three things (if any) the instructor could do to improve the blended instruction (both face to face and online) for this course
1.	
2.	
3.	

	List the positive and negative features (if any) of online learning in this course.	
	Positive	**Negative**
1.		
2.		
3.		

	List your positive and negative features (if any) of face-to-face learning in this course.	
	Positive	**Negative**
1.		
2.		
3.		

Thank you for filling out the survey.

APPENDIX H

INTERVIEW QUESTIONS

1. Ders Web sitesini ne tür amaçlarla kullandın?
2. Web sitesini kullanırken karşılaştığın problemlere birkaç örnek verebilir misin?
    a. Teknik açıdan (Web sayfasına ulaşamama, evden bağlanamama, şifre problemi...)
    b. İçerik açısından (konuların sana uygun olmaması, sayfalardaki bilgi yoğunluğu...)
3. Web sayfasıyla desteklenmiş başka ders almak durumunda öncelikli beklentilerin neler olurdu?
4. Sana göre, Web sitesini kullanmanız öğrenme sürecine ne gibi katkılar getirdi?
5. Sence bu dersin Internet uygulamalarıyla desteklenmesi ne gibi eksiklikleri gideriyor?
6. Dersi geleneksel bir ortamda değil de, harmanlanmış biçimde alman öğrenme sürecine ne gibi katkılar getirdi?
7. Derse yönelik motivasyonunu olumlu ve olumsuz yönde etkileyen faktörler (unsurlar) nelerdi?

8. Web ortamının derse destek olarak kullanılması, bu derseki motivasyonunu nasıl etkiledi?
9. Bu dersle ilgilien çok sevdiğin-beğendin şey ne oldu?
10. Bu dersle ilgili en sevmediğin şey ne oldu?
11. Forumda tartışmalara katıldın mı? Bu derste çevrimiçi tartışmalara (bilgi paylaşımına) devam etmek ister misin? Neden?
12. Derste kullandığınız yöntemler ve aktivitelerin derse katılımını ne şekilde etkiledi?
13. Forumdaki aktiviteler hakkında deneyim ve düşüncelerin neler (nasıl değerlendiriyorsun)?
    a. senaryoların derse olan yaklaşımınızı nasıl etkiledi? (olumlu/olumsuz)
    b. senaryolar seni araştırma yapmaya teşvik edip etmediği hakkındaki fikirlerini alabilir miyim?
    c. senaryolar derse olan motivasyonunu nasıl etkiledi?
    d. senaryoların seni daha çok düşünmeye sevketti mi? Bu konuda ne düşünüyorsun?
14. Yüzyüze derse forum kullanmanın etkisi nasıl oldu?
15. Forumdaki aktif katılımın hakkında bilgi verir misin?
    a. Aktif katılım nedir?
    b. Pasif katılım nedir?
    c. ders hocasının katılımını nasıl değerlendiriyorsun (katılımcı, pasif, öğretmen merkezli hep yönetici rolünde, öğrenci merkezli daha çok rehber rolünde...)
16. Dersin hocasının foruma katılımının senin
    a. Katılımını
    b. Motivasyonunu
    c. Öğrenme sürecini

    nasıl etkilediğini belirtir misin?

17. Derste çevrimiçi ortamda tartışmalar yapmak senin için uygun mu, yoksa bütün konuları sınıf ortamında yüz yüze mi tartışmak istersin? Nedenleriyle belirtir misin.
18. Derste farklı öğrenme stillerinin ve değişik öğrenci ihtiyaçlarının ne şekilde desteklendiğini düşünüyorsun?
19. Yüzyüze derste değil, ancak çevrimiçi tartışmalar (forumda yapılan) sayesinde edindiğini düşündüğün bilgi ve beceriler var mı?
20. Sınıf ortamındaki ve çevrimiçi tartışmalardaki kendi durumunu değerlendirmeni istesem, hangisinde;
    a. Daha aktifsin, neden?
    b. Daha rahatsın, neden?
21. Forumda yaptığınız herhangi bir tartışma sırasında dışlandığını, soyutlandığını hissettin mi? (felt isolated in the Web environment)
22. Dersteki iletişim hakkında bilgi verebilir misin? Hem yüzyüze derste hem de online ortam vasıtasıyla;
    a. diğer öğrencilerle olan iletişimin,
    b. ders veren öğretim elemanı ve asistanlarla olan iletişimin

nasıl gerçekleşti?

23. Derste işbirlikçi öğrenme ortamının desteklenmesine yönelik düşüncelerin neler?
24. Derste dersi veren kişiden ve dersi alan arkadaşlarından yeterli geribildirim alabildin mi?
25. Geribildirim yüzyüze derste ve online ortam vasıtasıyla ne şekilde desteklendi?
26. Dersin bu yapısı senin beklentilerine ne şekilde cevap verdiğini düşünüyorsun?
27. Sen de böyle bir yapıyı (blended designed course) kendi dersinde kullanmayı tercih eder miydin? Nedenleriyle belirtir misin?
28. Forumda gerçekleşen çevrimiçi tartışmaların ilerideki mesleksel hayatınıza etkileri neler olabilir?

29. Bu derste çevrimiçi tartışmaların (online discussions) geliştirilmesi için önerilerin neler olabilir?

APPENDIX I

PEER REVIEW CODES

Table I.1 Kappa Statistic for Use with Multiple Raters

Major Codes (Principles)		Reviewer 1	Reviewer 2	Reviewer 3
Student-Faculty Contact	1. Enhanced communication by Web	CAT1	CAT1	CAT1
	2. Sharing experiences with students	CAT1	CAT1	CAT1
	3. Electronic office hours	CAT1	CAT1	CAT1
	4. Instructor is available anytime	CAT1	CAT1	CAT1
	5. No time limitation to have contact	CAT1	CAT1	CAT3
	6. Communicating whole week by forum	CAT1	CAT3	CAT1
	7. Easy access to course documents	CAT1	CAT3	CAT1
	8. Comfortable communication	CAT1	CAT1	CAT1
	9. Quick answer to questions by e-mail	CAT1	CAT1	CAT4
	10. E-mail is comfortable	CAT1	CAT1	CAT1
	11. More interaction develop friendship in class	CAT1	CAT1	CAT1
	12. Being noticed by instructor during discussions	CAT1	CAT1	CAT1

Table I.1 (Continued)

Major Codes (Principles)		Reviewer 1	Reviewer 2	Reviewer 3
	13. Form an observation group	CAT2	CAT2	CAT2
	14. Sharing ideas helps understanding	CAT2	CAT2	CAT2
	15. Sharing helps enriching ideas	CAT2	CAT2	CAT2
Cooperation	16. Sharing different experiences during discussions	CAT2	CAT2	CAT2
	17. Learning from experienced people	CAT2	CAT2	CAT2
	18. Collaborative activities supported during observation hours	CAT2	CAT2	CAT2
	19. Collaborative activities supported by face-to-face discussions	CAT2	CAT2	CAT2
	20. Take own responsibility	CAT3	CAT3	CAT3
	21. Make independent studies	CAT3	CAT3	CAT3
	22. Be active in suggesting readings, and documents to others in class	CAT3	CAT3	CAT3
	23. Communication tools supported student activeness	CAT3	CAT3	CAT3
	24. Continuance in face-to-face and online discussions support activeness	CAT3	CAT3	CAT6
	25. Having more time during asynchronous online discussions support being more active	CAT3	CAT3	CAT6
	26. Detailed time supported activeness in asynchronous online discussions	CAT3	CAT3	CAT3
	27. Ill-structured scenarios supported activeness	CAT3	CAT3	CAT3
	28. Scenarios provided having meaningful discussions	CAT3	CAT3	CAT6
Active Learning	29. Scenarios supported remembering easily	CAT3	CAT3	CAT3
	30. Connection between discussed scenarios and real life	CAT3	CAT6	CAT3
	31. Scenarios make being more responsible of own ideas by not having a strict answer	CAT3	CAT3	CAT3
	32. Web support activeness by providing any source of information	CAT3	CAT3	CAT3
	33. Web supported investigation	CAT3	CAT3	CAT3

Table I.1 (Continued)

Major Codes (Principles)		Reviewer 1	Reviewer 2	Reviewer 3
	34. Video clips helped producing participatory learning	CAT3	CAT3	CAT3
	35. Video clips supported activeness	CAT3	CAT3	CAT3
	36. Technology support quick feedback	CAT4	CAT4	CAT4
	37. Good feedback from instructor	CAT4	CAT4	CAT4
	38. Low feedback from peers	CAT4	CAT4	CAT4
	39. Enhanced feedback by Web	CAT4	CAT4	CAT4
	40. Feedback supports serious discussions	CAT4	CAT4	CAT6
	41. Feedback activate learners	CAT4	CAT3	CAT4
	42. Feedback increase the desire to attend discussions	CAT4	CAT3	CAT4
	43. Private feedbacks by e-mails	CAT4	CAT4	CAT4
	44. Forum provides giving group feedback	CAT4	CAT4	CAT4
	45. Web supports giving personal feedbacks	CAT4	CAT4	CAT4
Feedback	46. Web supports getting group feedbacks	CAT4	CAT2	CAT4
	47. Web supports taking personal feedbacks easily	CAT4	CAT4	CAT1
	48. Everyone benefit from feedbacks is forum	CAT4	CAT4	CAT4
	49. Liked getting feedback from peers by forum discussions	CAT4	CAT2	CAT4
	50. Timely feedback in face-to-face discussions	CAT4	CAT4	CAT5
	51. Pushing each other by giving feedback in forum	CAT4	CAT4	CAT4
	52. Reading all feedback comments in forum is time consuming	CAT4	CAT4	CAT5
	53. Giving feedback to others is time consuming	CAT4	CAT4	CAT5
	54. One minute papers used for regular feedback	CAT4	CAT4	CAT4
	55. Giving feedback to pairs in observation hours	CAT4	CAT4	CAT4
	56. Blended environment enables using time effectively	CAT5	CAT5	CAT5
	57. Web helps planning time by own schedules	CAT5	CAT5	CAT5
Time on Task	58. No time limit in asynchronous discussions	CAT5	CAT5	CAT5

Table I.1 (Continued)

Major Codes (Principles)		Reviewer 1	Reviewer 2	Reviewer 3
	59. Web save time	CAT5	CAT5	CAT5
	60. Face-to-face discussions are more practical that saves time	CAT5	CAT5	CAT5
	61. Storing everything on course Web site prevents time loss	CAT5	CAT5	CAT5
	62. Using a Web site was supportive	CAT5	CAT5	CAT5
	63. Internet support promoted high expectations	CAT6	CAT1	CAT6
	64. No time limit in asynchronous discussions promote high expectations	CAT6	CAT6	CAT6
	65. Discussing by writing improve ideas	CAT6	CAT6	CAT6
	66. Better writings expected during asynchronous discussions	CAT6	CAT6	CAT6
Expectations	67. Feeling confident during studies improves expectations	CAT6	CAT6	CAT6
	68. Self-confident during asynchronous discussions	CAT6	CAT6	CAT6
	69. Being computer literate increase high expectations	CAT6	CAT6	CAT6
	70. Expectations of mentor teacher improve own expectations of future profession	CAT6	CAT6	CAT6
	71. Positive feedbacks helped expecting more	CAT6	CAT6	CAT6
	72. Blended environment enable different activities	CAT7	CAT7	CAT7
	73. Blended course address different needs	CAT7	CAT7	CAT7
	74. Web provide all time support	CAT7	CAT7	CAT7
	75. Web provide more involvement with the course materials	CAT7	CAT3	CAT7
	76. Online discussions were good for shy students	CAT7	CAT7	CAT7
Respect Diverse Talents and Ways of Learning	77. Foreign students benefit more from online activities	CAT7	CAT7	CAT7
	78. More student involvement in asynchronous discussions	CAT7	CAT7	CAT7

Table I.1 (Continued)

Major Codes (Principles)		Reviewer 1	Reviewer 2	Reviewer 3
	79. Face-to-face discussions enable having discussions by speaking	CAT7	CAT7	CAT7
	80. Video clips visually attracted students	CAT7	CAT3	CAT7
	81. Scenarios make thinking own life	CAT7	CAT3	CAT7
	82. Blended design attracted attention	CAT8	CAT8	CAT8
	83. Integrating scenarios make more interested with the course	CAT8	CAT3	CAT8
	84. Online discussions	CAT8	CAT1	CAT8
	85. Face-to-face discussions	CAT8	CAT1	CAT8
	86. Different online learning activities	CAT8	CAT8	CAT8
Design	87. Scheduled deadlines	CAT8	CAT8	CAT8
	88. Job related activities	CAT8	CAT8	CAT8
	89. Motivating Web site	CAT8	CAT8	CAT8
	90. Real-life related discussion topics	CAT8	CAT8	CAT3
	91. Web provide time for investigations	CAT8	CAT8	CAT8
	92. Using emoticons during online discussions	CAT8	CAT8	CAT8
	93. Technical problems	CAT9	CAT8	CAT9
	94. Limited technical help	CAT9	CAT9	CAT9
	95. Relevant links with the course	CAT9	CAT9	CAT9
	96. Easy to use menus	CAT9	CAT9	CAT8
Usability	97. Appealing appearance	CAT9	CAT9	CAT9
	98. Organized information	CAT9	CAT9	CAT9
	99. Easy to use discussion page	CAT9	CAT9	CAT9
	100. Password problem	CAT9	CAT9	CAT9
	101. Easy navigation	CAT9	CAT9	CAT9
	102. Large number of menus	CAT9	CAT8	CAT9
	103. Ten minute log time	CAT9	CAT9	CAT9

Legend:

Categories:
CAT1: Student Faculty-Contact
CAT2: Cooperation
CAT3: Active Learning
CAT4: Feedback

CAT5: Time on Task
CAT6: Expectations
CAT7: Respect Diverse Talents and Ways of Learning
CAT8: Design
CAT9: Usability of the Course

CURRICULUM VITAE

PERSONAL INFORMATION

Surname, Name : Kocaman Karoğlu, Aslıhan

Nationality : Turkish (TC)

Date and Place of Birth : 05 February 1980, Göksun

Marital Status : Married

Phone : 0532-641-5679 (gsm)

e-mail : askocaman@hotmail.com, akocaman@metu.edu.tr

EDUCATION:

Degree	Institution	Year of Graduation
Ph.D.	METU – Comp. Educ. & Inst. Tech.	2002-2009
BS	Ankara U.– Comp. Educ-. & Inst. Tech.	1998-2002
High School	Kozan Anatolian High School	1991-1998

FOREIGN LANGUAGES:

English (advanced level), German (elementary level)

PUBLICATIONS

Journal Papers

Ertmer , P. A., Stepich , D. A., Flanagan, S., Kocaman-Karoglu, A., Reiner, C., Reyes, L., Santone, A. L., Ushigusa, S. (2009). Impact of guidance on the problem-solving efforts of instructional design novices. *Performance Improvement Quarterly, 21*(4), 117-132.

Ertmer, P., Glazewski, K., Jones, D., Ottenbreit-Leftwich, A., Goktas, Y., Collins, K. & Kocaman, A. (2009). Facilitating technology-enhanced problem-based learning (PBL) in the middle school classroom: an examination of how and why teachers adapt. *Journal of Interactive Learning Research. 20*(1), 35-54.

Goktas, Y., Temur, N., Kocaman, A., & Cagiltay, K. (2009). Historical development of instructional technology in Turkey: The Era of the Ottoman Empire. *Gazi Üniversitesi Endüstriyel Sanatlar Egitim Fakültesi Dergisi* (in Turkish).

Yildirim, S., Goktas, Y., Temur Gedik, N., ve Kocaman, A. (2004). İyi bir öğrenme yönetimi (ÖYS) için kriter önerisi. *Türk Eğitim Bilimleri Dergisi, 2*(4), 463-464.

International-National Conference Papers

Kocaman-Karoglu, A., Kiraz, E. & Ozden, M. (2008). ARCS motivation model in the design and development of a blended course. In *Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications 2008* (pp. 2093-2098). Chesapeake, VA: AACE. (Vienna, Austria, 30 June-4 July 2008)

Bakar, A. Kocaman-Karoğlu, A. (2008). İlköğretim branş öğretmenlerinin derslerinde BDE uygulamalarından yararlanma durumlarının incelenmesi (The investigation of the elementary school teachers' status in terms of using CAI applications). II. Uluslararası Bilgisayar ve Öğretim Teknolojileri Sempozyumu (2nd International Computer and Educational Technology Symposium). (Izmir, Turkey, April 16-18, 2008)

Ertmer , P. A., Stepich , D. A., Flanagan, S., Kocaman-Karoglu, A., Reiner, C., Reyes, L., Santone, A. L., Ushigusa, S. (2008). Ill-structured problem solving: helping instructional design novices. AERA Annual Meeting, New York, USA, March 25-27, 2008.

Kocaman-Karoglu, A, Kiraz, E., & Ozden, M.Y. (2008). An evaluative study of a blended course based on "Good Practice Principles": Case of Prospective Student Teachers in Turkey. In *Proceeding of the International Conference of the Society*

for Information Technology and Teacher Education 2008, (pp. 4204-4208). Chesapeake, VA: AACE. (Las Vegas, Nevada, USA, March 3-8, 2008)

Kocaman-Karoglu, A. (2008). A digital storytelling implementation experience with early childhood students. In K. McFerrin et al. (Eds.), *Proceedings of Society for Information Technology and Teacher Education International Conference 2008* (pp. 931-933). Chesapeake, VA: AACE. (Las Vegas, Nevada, USA, March 3-8, 2008)

Gedik, N. T., Karoglu, A. K. & Goktas, Y. (2007). Research trends in the field of instructional technology: 1940-1990s. 1st International Computer and Educational Technology Symposium.

Ertmer, P. A., Simons, K. D., Jones, D., Ottenbreit-Leftwich, A., Goktas, Y., Kocaman, A. (2007). Teachers' strategies for effectively implementing PBL in the middle school classroom. *30th Annual Convention of Association for Educational Computing and Technology,* Anaheim, California, USA, October 2007.

Kocaman, A, Ozden, M.Y, & Kiraz, E. (2007) Good practice principles applied to a teacher education blended course. *7th Annual Instructional Systems Technology Conference, Indiana, USA, March 2007.*

Kocaman, A. & Ozden, M.Y. (2007). Scenario-based asynchronous discussions: a case study. *Teaching and Learning with Technology Conference*, W. Lafayette, Indiana, USA, March 2007.

Kocaman, A. (2007). The one-minute paper: an application in forum environments. In C. Crawford et al. (Eds.), *Proceedings of Society for Information Technology and Teacher Education International Conference 2007* (pp. 103-105). Chesapeake, VA: AACE. (San Antonio, Texas, USA March 26, 2007)

Kocaman, A, Kiraz, E. , & Ozden, M.Y. (2006). Blended Learning approach in teacher education: students' perceptions and experiences from Turkey. *World Conference on Educational Multimedia, Hypermedia and Telecommunications.* Chesapeake, VA: AACE, USA, June 2006.

Kocaman,A. & Ozden, M.Y. (2006). Supporting preservice teachers with asynchronous ill-structured scenarios. *World Conference on Educational Multimedia, Hypermedia and Telecommunications.* Chesapeake, VA: AACE, USA, June 2006.

Ozden, M.Y., Temur Gedik, N., & Kocaman, A. (2006). Integrating Web into training: an in-service program in Turkey. *World Conference on Educational Multimedia, Hypermedia and Telecommunications.* Chesapeake, VA: AACE, USA, June 2006.

Kocaman, A., Temur Gedik, N., & Goktas, Y. (2006).“Potentials of LMS’: Student and instructor perspectives. *Teaching and Learning with Technology Conference*, W. Lafayette, Indiana, USA, March 2006.

Yildirim, S., Temur, N., Kocaman, A. & Goktas, Y. (2004). What makes a good LMS: an analytical approach to assessment of LMSs. 5th International Conference on Information Technology Based Higher Education and Training, ITHET, İstanbul, 2004.