IMPLEMENTATION OF CONSTRUCTIVIST LIFE SCIENCES CURRICULUM: A CASE STUDY

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Approval of the Graduate School of Social Sciences.

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ABSTRACT

IMPLEMENTATION OF CONSTRUCTIVIST LIFE SCIENCES CURRICULUM: A CASE STUDY

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The purpose of this qualitative case study is threefold: (1) to examine the implementation of current Life Sciences curriculum in a selected primary school from the perspectives of teachers, students and administrators; (2) to investigate the degree to which teachers', students' and administrators' perceptions were embedded in the classroom practices; and (3) to identify whether the implementation of the curriculum was conducive to principles of constructivist pedagogy.

An elementary school was chosen as a single case in an outer district of Ankara. The participants of the study were the school administrator and 2 co-administrators, 4 classroom teachers and 87 students from different 2nd and 3rd grades classrooms.

The data were collected through document analysis, observations in the Life Sciences classes, semi-structured interview with administrators, stimulated recall interview with teachers, and creative drama with students. Content analysis was used to analyze the data.

The findings indicated that the suggested Life Sciences Curriculum was conducive to the principles of constructivist pedagogy in terms of its content;

teaching and learning processes; instructional methods; assessment methods; and teachers' and students' roles. However, the acquisitions of the LSC were not conducive to the constructivist approach.

The findings on the teachers', students' and administrators' perceptions about the Life Sciences curriculum indicated that in Life Sciences lessons the teachers seemed to have a role of knowledge transmitter to a group of passive students. According to the findings, the most frequently used teaching methods were lecturing, question-answer and demonstration through using textbooks, workbooks, and white boards. In addition, the most frequently used assessment methods were essay and oral exams, classroom observations and self-assessment. Overall it can be concluded from the findings that although the suggested Life Sciences curriculum was prepared in line with the principles of constructivist pedagogy, the way it was implemented had some deficiencies regarding the actualization of goals suggested by a constructivist curriculum.

Key Words: Curriculum Reform, Life Sciences Curriculum, Constructivist Pedagogy, Implementations of Curriculum Reform.

ÖZ

YAPILANCIRMACI HAYAT BİLGİSİ PROGRAMININ UYGULANMASI: BİR DURUM ÇALIŞMASI

Taneri, Pervin Oya

Doktora Tezi, Eğitim Bilimleri Bölümü

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Bu durum çalışmasının üç amacı vardır: (1) Hayat Bilgisi dersinin işlenişi hakkında seçilen bir okuldaki, öğretmen, öğrenci ve okul yöneticilerinin algılarını incelemek, (2) öğretmen, öğrenci ve okul yöneticilerinin algılarının sınıf uygulamalarına ne derecede aktarıldığını araştırmak ve (3) müfredatın uygulanmasının yapılandırmacı pedagoji ilkelerine uygun olup olmadığını belirlemek.

Bu amaçla Ankara'da bir ilköğretim okulu seçilmiştir. Bu çalışmaya bir okul müdürü, iki müdür yardımcısı, dört sınıf öğretmeni ve 2. ve 3. sınıflardan 87 öğrenci katılmıştır.

Araştırma verileri doküman incelemesi, Hayat Bilgisi ders gözlemi, okul yöneticileriyle yarı yapılandırılmış görüşme, öğretmenlerle anımsamayı sağlayan görüşme ve öğrencilerle yaratıcı drama yöntemleri kullanılarak toplanmıştır. Elde edilen veriler içerik analizi yoluyla çözümlenmiştir.

Araştırmanın bulguları Hayat Bilgisi Programı'nda önerilen içerik, öğrenme-öğretme süreçleri, öğretim teknikleri, değerlendirme yöntemleri, ile öğretmen-öğrenci rollerinin yapılandırmacı yaklaşımla uyumlu olduğunu göstermektedir. Ancak programda önerilen bazı kazanımların yapılandırmacı yaklaşıma uygun olmadığı görülmüştür.

Öğretmen, öğrenci ve okul yöneticilerinin algılarıyla ilgili araştırma bulgularına göre, sınıflarda öğretmenler bilgi aktaran, öğrenciler de bilgiyi pasif olarak alan rolleri yansıtmaktadır. Bulgulara göre, Hayat Bilgisi dersinde, ders kitapları, çalışma kitapları ve tahta yardımıyla en çok kullanılan öğretim yöntemleri düz anlatım, soru-cevap, ve gösteridir. Ayrıca, yazılı ve sözlü sınavlar, sınıf gözlemi ve öz-değerlendirmenin de en çok kullanılan değerlendirme teknikleri olduğu görülmüştür. Elde edilen bulgular, Hayat Bilgisi Programının büyük oranda yapılandırmacı yaklaşımın ilkeleri doğrultusunda hazırlanmış olmasına rağmen, uygulamanın bu yapılandırmacı yaklaşımın önerdiği amaçlara ulaşmada yeterli olmadığını göstermiştir.

Anahtar Kelimeler: Müfredat Reformu, Hayat Bilgisi Programı, Yapılandırmacı Pedagoji, Müfredat Reformu Uygulamaları.

This Thesis is dedicated to My Sultan

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CHAPTER I

INTRODUCTION

"Education is an admirable thing,
but it is well to remember from time to time that
nothing worth knowing can be taught."
Oscar Wilde

1. Background to the Study

As Heraclitus once said, there is nothing constant except change. Today, as a result of constant changes in the universe, the length of time for which information remains valid and reliable is getting shorter and shorter. Information that is correct at one moment may not be accurate a moment later, which means that what schools teach students may be obsolete by the time they graduate. The American Society of Training and Documentation (ASTD) recently declared that the amount of knowledge in the world has doubled over the past decade and is now doubling every eighteen months (Gonzalez, 2007). In a world where nothing remains constant, absolute knowledge is impossible to attain; thus, the main concern of today's educators is finding an answer to the question of how to reform the education system to meet emerging challenges.

Many forward-looking educators emphasize the need to adapt the philosophy of education and teacher-training programs to notable scientific, economic, technological and social changes (Black & Deci, 2000; Burris & Garton, 2006; Hançer, Şensoy & Yıldırım, 2003; Huitt, 1999; Kaptan, 1999; Temizkan & Bağcı, 2008; Ornstein & Hunkins, 1998; Soylu, 2004; Yıldırım, 2006).

In order to survive amidst constant changes and developments in science, technology, art, economy and communication, societies must enact educational reforms (Herman, Aschbacher, & Winter, 1992; Soylu, 2004) that emphasize

construction of meaning. Given that knowledge does not remain static, but is continuously evolving and changing, learners must adjust and build on their prior knowledge to accommodate new experiences. Hence, rather than viewing learning as the passive transmission of information from one individual to another, some educators believe that learners actively generate new knowledge on the foundation of prior learning and use of knowledge attained (Kaptan, 1999; Richardson, 2003; Yıldırım, 2006).

Education is expected to equip individuals to function effectively in the world of the future. However, students trained according to a traditional philosophy of education are not familiar with the back-and-forth flow of information; i.e., they receive information without inquiring as to whether or not this information applies to the real world (Black & Deci, 2000). Today's society demands a work force of highly skilled, well-communicating, problem-solving and educated citizens (Burris & Garton, 2006; Kaptan, 1999; Richardson, 2003; Temizkan & Bağcı, 2008; Yıldırım, 2006), which in turn demands new and better education policies and practices. Endowing a work force with the skills needed by society requires student-centered curricula that are compatible with information and communication technology and produce solutions to national and international problems (Demiralay & Karadeniz, 2008; Ersoy & Kaya, 2008; Hançer et al., 2003) and whose purpose is to educate citizens who are aware of their responsibilities and rights, who possess creative and critical thinking skills, are participative, tolerant, cognizant and respectful of the fundamental rights and freedoms of others (Temizkan & Bağcı, 2008). In view of the changes taking place in Turkey and throughout the world, over the past five years the Ministry of National Education (MONE) has mandated several major curriculum revisions for elementary education. In the 2004-2005 academic year, a curriculum reform was undertaken as part of a comprehensive education reform designed to ensure student-centered education for all in line with the Turkish education system's stated aim of training well-skilled, productive and creative individuals prepared for the information age and committed to Atatürk's reforms and democratic values.

Thornton's (1994) review of social studies curriculum and instruction theory and research suggests that there have always been disputes about what should be taught under the title of social studies and how this content should be delivered. Recent reform movements have emphasized the acquisition of specific skills such as

collaborative learning, critical thinking, independent learning, self-evaluation, integrity, accountability, respect for others and social commitment. The current Turkish elementary education curriculum reform movements also have been attempted to be in accordance with the principles of the constructivist approach (MONE, 2005).

According to the advocates of constructivism, learning is a consequence of construction, association, reflection and cooperation in a rich context (Brown, Collins, & Duguid, 1989). Given that constructivist learning approaches aim to address different needs and interests of students, promote critical thinking skills, establish bridges between skills developed at school and work and real-life, and help students to utilize their skills and knowledge in problem-solving and decision-making (El-Sheikh Hasan, 2000), current trends in curriculum reform in Turkey and throughout the world may be considered a move away from the traditional approach towards a constructivist one.

Today, primary education is intended not only to teach reading and writing skills to individuals, but to help them assess considerable amounts of information, think both critically and creatively, solve complex problems and communicate effectively. In order for students to acquire these skills, a multi-disciplinary course is required. Individuals at the elementary-education level think wholly and systematically about multiple subjects. In order to teach them complex skills derived from different disciplines (i.e. social sciences, natural sciences and the arts), education must take a holistic approach. As with the Life Sciences Course in Turkey, most humanities and social studies courses throughout the world integrate multiple disciplines, including topics such as art, culture, geography, history, environmental issues, social constructs, communication and citizenship.

Many educators have stated that curriculum change has become inevitable in today's world (El-Sheikh Hasan, 2000; Flett & Wallace, 2005; Korthagen, 2005; Orpwood & Barnett, 1997); however, there is very little research investigating curriculum reform in social sciences and humanities education at the elementary level. The details and rationale of the social studies curriculum reform in Kentucky were described by Otto (1994) as a move away from a textbook-oriented social studies curriculum and instruction that allowed only passive participation. In line with the recommendations of researchers, the social studies curriculum was changed to include integrated curriculum content based on thematic teaching units,

cooperative learning and teamwork, interdisciplinary teaching that promotes student growth, and multidimensional and authentic assessment, as well as local control of curriculum development. In Greece, a new Nursery, Primary and Secondary Education program was developed with a thematic approach to learning that has focused on the development of enterprise and critical thinking, cooperative learning and interdisciplinary perspectives (Flouris & Pasias, 2003).

A number of researchers have pointed out that the implementation of curriculum reform entails certain difficulties and responsibilities (Dello-Iacovo, 2009; Marton, 2006; Shan, 2002; Yu, 2003). Dello-Iacovo (2009) reported frequent complaints of insufficient funding and inadequate support by local authorities as factors hindering successful implementation of curriculum reform. She also noted that the lack of negotiation and feedback led to mismatches between scheduled and allocated teaching time for different topics and between the content envisaged in the new curriculum and the actual content of textbooks. Likewise, Shan (2002) reported complaints that teachers were not sufficiently prepared to implement new teaching methods and lacked specific guidance as to how to integrate practical classroom learning activities. Yu (2003) also stated that teachers faced significant difficulties in effectively using new teaching approaches, and Marton (2006) asserted that teachers had been left on their own to implement the new curriculum, receiving little support from colleagues or district educational specialists, leaving them conceptually, psychologically and pedagogically unprepared.

The main purpose of primary education in Turkey is to educate the individuals as responsible and productive citizens in the society. The Life Sciences and Social Studies courses are designed as citizenship education program in primary education. These courses enable students to gain basic skills to function in the society and become citizens that the society needs (Barth & Demirtaş, 1998). Since the content of Life Sciences curriculum is chosen from individuals' environment (Sönmez, 1996), the Life Sciences courses influenced by the changes in the society, especially the changes in technology (Aladağ & Aladağ, 2009). In order to draw a complete picture of the current state of Life Sciences curriculum implementation, research is required at the individual and institutional level that collects data from many different sources, including teachers, students and administrators. If the objectives of the new Life Sciences curriculum are to be achieved, the views of the practitioners of the curriculum with regard to its implementation must be given importance. In

addition to investigating the perceptions of teachers, students and administrators, observing actual classroom activities may be expected to help provide a more complete understanding of the implementation of educational reform and the prospective effects of a constructivist curriculum.

1.2. Purpose of the Study

The purpose of the study is threefold (1) to examine the implementation of current Life Sciences curriculum in a selected primary school from the perspectives of teachers, students and administrators; (2) to investigate the degree to which these perceptions were embedded in the classroom practices; (3) to identify whether the implementation of the curriculum was conducive to principles of constructivist pedagogy. The following questions provide a framework for this study:

1. What are the general characteristics of current Life Sciences curriculum?
2. How the LSC curriculum implemented from the perspectives of administrators, teachers and students?
    2.1. What are the perceived roles of teachers, students and parents in the implementation of LSC?
    2.2. What are the main teaching methods and techniques used in Life Sciences lessons?
    2.3. What are the main teaching materials used in Life Sciences lessons?
    2.4. What are the main assessment techniques used in Life Sciences lessons?
3. Is the implementation of current Life Sciences curriculum conducive to specific recommendations offered by constructivist pedagogy?

1.3. Significance of the Study

By collecting detailed information from the perspectives of various stakeholders such as administrators, teachers and students on the implementation of

the Life Sciences curriculum, the Ministry of National Education will be able to better understand how the constructivist Life Sciences Curriculum are being implemented in the schools and to more clearly identify challenges to curriculum implementation.

Although the current LSC is assumed to be suitable for all schools nationwide, teachers implementing this curriculum may face a variety of difficulties in terms of its applicability in their particular classrooms. Studies examining implementation of new curricula at the elementary and secondary school levels have found that teachers may complain about specific aspects of curriculum in their subject area; insufficient time to cover all the units required in a semester (Altınyelken, 2010, Akşit, 2007; Ekiz, 2004; Gökçek, 2009; Haser & Star, 2009); sequencing of units that prevents students from developing an understanding of important ideas and concepts; lack of the materials; and lack of knowledge on the assessment procedures specified by the curriculum. Given the numerous problems identified by teachers as stemming from specific aspects of the curriculum (Birgin, Tutak & Türkdoğan, 2009; Grossman, Onkol & Sands, 2007; Kırkgöz, 2008; Sert, 2008), extensive quantitative and qualitative research is needed to evaluate the outcomes of the education reform.

The relationship between classroom practice and stated perceptions about the Life Sciences curriculum may be clarified by examining school administrators', teachers' and students' opinions about education and teachers' perceptions about the implementation of the current Life Sciences curriculum, observing classroom practice, reviewing different types of assessment and interviewing teachers. Examining possible relationships between administrators', teachers' and students' perceptions about the current Life Sciences curriculum and actual classroom practices can offer deeper insight into problems related to curriculum reform.

The significance of this study lies in the data collection methods used to answer the research questions. For the purpose of exploring the perceptions of 2nd and 3rd grade primary school students, creative drama was used as data collection method.

Research with children and young people is crucial; however, many researchers discuss the difficulties of conducting research with young children considering the methodological concerns, and ethical issues (Christensen & James, 2008; Davis & Gallagher, 2009; Fraser, & Ding, 2004; Flewitt, 2005; Keddie, 2000; Lewis, Kellet, Robinson, Percy-Smith & Thomas, 2010; Tisdall, Woodhead & Faulkner, 2000). Usually, young children are regarded as immature to understand and clarify what is

going on. Thus, the researchers often avoid choosing children as participants in their studies. In order to understand the experiences of young children the researchers generally explored the views and understandings of their adult caretakers (i.e, teachers, administrators, and parents) rather than children's own views and understandings (Fraser, 2004). Many researchers collected data related to Life Sciences curriculum, through document analysis (Akınoğlu, 2008), questioning the teachers' and administrators' opinions (Gömleksiz & Bulut, 2007) and questioning 3rd to 8th grade students' opinions (Güneş & Demir, 2007; Hotaman, 2009; Ocak & Gündüz, 2006). Considering the difficulties in conducting research with young subjects, researchers prefer to exclude young children from the research process. The researchers have seen young children as objects of their research rather than subject. However, adults cannot know children's world perspectives unless the children clarify to them (Saint-Exupery, 2007).

Creative drama offers each child an opportunity to share ideas by permitting them to play freely in a setting of security and acceptance. When participate in creative drama activities the students feel comfortable and express themselves freely. In this study the researcher's experiences with creative drama indicated that after adopting appropriate data collection methods, young children can and should contribute to research as informants.

Another data collection method used in this study was stimulated recall interview conducted with teachers. This method allows researchers to investigate cognitive strategies learning process, and spontaneous teacher behaviors. It also contributes to the qualitative studies with minimal intervention in the flow of events under investigation (Lyle, 2003). It was also observed during the data collection process that stimulated recall interview was an effective method to collect in-dept data on the perceptions and experiences of participant teachers in Life Sciences classes.

1.4. Definition of Terms

Key terms needing clarification include the following:

Acquisition: Acquisition is a term that is used instead of the target behavior of the previous curricula. Acquisition refers to knowledge, skills and attitudes that are expected to acquire by students in the learning process through planned and organized experiences (Ata, 2006).

Alternative Assessment: The terms alternative assessment, authentic assessment and performance-based assessment are used synonymously to mean variations of performance assessments that require students to generate rather than chose a response (Herman et al., 1992). This assessment differs from traditional, standardized, norm- and criterion-referenced paper-and-pencil testing. Alternative assessment includes short-answer and essay tests, performance assessment, oral presentations, demonstrations, exhibitions and portfolios (Montgomery, 2005).

Creative Thinking: Creative thinking refers to the process of thinking about ideas or situations in an imaginative and unusual manner so as to comprehend them better and react to them in new and constructive ways (Martin, Craft, & Tillema, 2002; Thacker, 1990).

Critical Thinking: Critical thinking refers to the process of actively and skillfully conceptualizing, applying, analyzing, synthesizing and/or evaluating information gathered or generated by observation, experience, reflection, reasoning and/or communication as a guide to belief or action (Dağlı, 2008; Fisher & Scriven, 1997; Martin et al., 2002; Mingers, 2000; Parker & Moore, 2005).

Higher Order Thinking: Higher order thinking is an umbrella term to cover problem solving, critical thinking, creative thinking, and decision making (Lewis & Smith, 1993).

Life Sciences Course: The terms “Life Sciences”, “Life Studies” and “Life Knowledge” have been used interchangeably by different researchers. The present

study uses the term “Life Sciences” to refer to a basis course taught in Grades 1, 2, and 3. The term is explained in detail in Chapters 2 and 3.

Metacognition: Metacognition, or ‘thinking about thinking’, refers to awareness of the process of learning (Metcalfe & Shimamura, 1994; Ridley, Schutz, Glanz, & Weinstein, 1992; Santrock, 2008; Winn & Snyder, 1996).

Portfolio: A portfolio is a selected collection of a variety of performance-based work. A portfolio might include a student’s ‘best pieces’, with the student’s evaluation of their strengths and weaknesses, as well as some ‘works-in-progress’ that illustrate improvements made over time (Tierney, Carter, & Desai 1991).

Portfolio Assessment: Portfolio assessment is an assessment of a student portfolio that concentrates on student growth and development over time (Banta, 2003; Barton & Collins, 1997).

Stimulated Recall Interview: Stimulated recall refers to a set of reflective research procedures through which cognitive processes can be explored by requesting participants to recall, when stimulated by a capture, their thinking during an event (Lyle, 2003; Gass, 2000).

Traditional Assessment: Traditional assessment generally refers to written testing, such as multiple choices, matching, true/false. The assessment, or test, assumes that all students should learn the same thing, and relies on rote memorization of facts. Responses offer little opportunity for demonstration of the thought processes characteristics of critical thinking skills (Berlak, 1992; Bertrand, 1993).

The following chapter is devoted to a review of the relevant literature. Chapter Three presents the study methodology, and Chapter Four presents the study results. Conclusions and implications for practice and further research are presented in Chapter Five.

CHAPTER II

REVIEW OF LITERATURE

"The better jobs of today and tomorrow require habit of continuous learning"
Peter Drucker

In this section, the relevant literature was reviewed to validate the theoretical framework of this study. This study traces the implementation of Life Sciences Curriculum followed in the primary schools in Turkey, with a particular focus on the 2nd and 3rd grades.

2.1. Need for Curriculum Innovation and Direction of Reforms

Many educators, policy makers and parents today seek the best ways to educate children. The new millennium was accompanied by remarkable technological discoveries and developments. Today's societies live in a time of unexpected and swift change. New knowledge, tools, and ways of doing and communicating continue to emerge and evolve. The nature of education is changing internationally. In order to best prepare the next generation to succeed in the 21st century comprehensive curricular innovations are necessary. Currently, there has been a worldwide demand on the school to become more meaningful for all children. To accomplish industrialization and modernization successfully, it is necessary to develop education and training strongly, thus many countries have begun to undertake curriculum reform.

In order to make radical reforms in education, first of all the philosophy of education needs to be changed. Then, the curriculum should be developed in line with this philosophy. The literature review on the educational philosophies and instructional designs revealed that there is move away from traditional-behavioral

approach to progressive-constructivist approach. The following figure illustrates this trend.

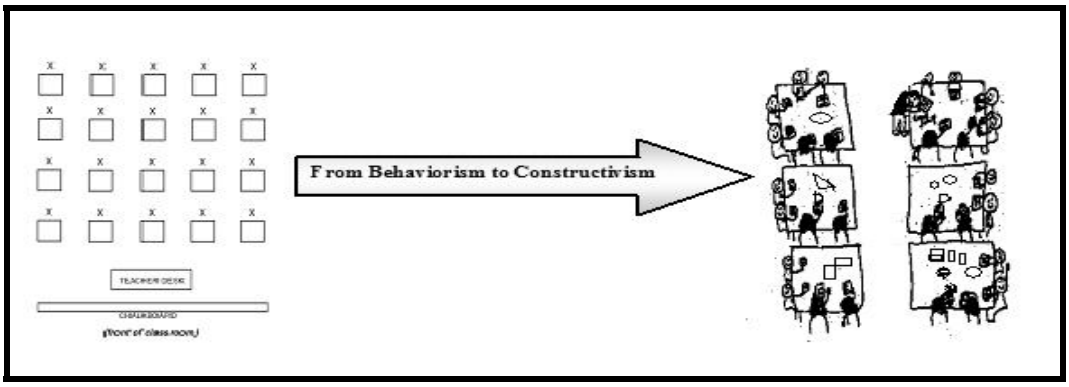


Figure 2.1. The Direction of Change in the Curriculum Approach

Many of the curricula were based on behavioral approach in the past (Çınar, Teyfur &, Teyfur, 2006; MEB, 2005; Şahin, 2007; Vural, 2003). In other words, the starting point of curriculum was the goals and objectives. Content, teaching strategies, instructional materials, and assessment methods were defined in line with these goals and objectives. The curricula were seen as a blueprint that should be followed precisely. The teachers did not allow making any changes. The traditional approach emphasized that there is objective truth that need to transmit to the individuals. Therefore, teachers were considered authorities who have all the information. The teachers' role was seen as transmitting the knowledge to the students. The behaviorist approach emphasized teacher-centered instruction, therefore, in the decision-making process the teachers were the authority. The straight row seating arrangement was emphasized in order to ensure that teachers to be visible to everyone. Lecture based instruction, reinforcement, rote memorization, summative assessment were the basic characteristics of the behaviorist classrooms. The traditional approach emphasizes conservative subject matter and teaching methods. The students' interests, motivations, and psychological states are not given much attention. Students are viewed as deficient and needing discipline and pressure to keep learning. Students seen as passively absorbing the knowledge and the teachers are authorities. School viewed as a place where children come to learn what they need to know (Ryan & Cooper, 2004).

Korthagen (2005) asserts that the traditional view of education is seriously questioned. Educators do not believe in the possibility of a direct transfer of knowledge any longer. Researchers affirmed that behavioral approach could not meet today's requirements. Many educational research studies regarding the discussions about objectivist and constructivist approach draw attention to the philosophical differences between the two approaches (Bednar, Cunningham, Duffy & Perry, 1995; Dick, 1995; Rowland, 1995).

Therefore, the educational specialists were directed to the constructivist approach that focused on "learning" rather than "teaching". The “constructivist” approach focuses on students’ individual needs, interests and problem-solving skills. In progressive approach focus is on *how* to think rather than on *what* to think. Rather than being a presenter of knowledge or a taskmaster, the teacher is an intellectual guide, a facilitator in the problem-solving process (Bıkmaz, 2006; Ryan & Cooper, 2004).

Advocates of the constructivist approach claimed that the knowledge is not out there, it is constructed by the individuals. Since the knowledge continuously increases all over the world, no one can have all knowledge. Therefore, the students choose what they would examine, determining for themselves what they would think about and how they would think about it. They build the knowledge, incorporating it with all their other direct experiences of the real world. Learning is a meaningful process, in which the students have a responsibility of their own learning.

It is well documented that many phenomena in the physical world request children to construct their own explanations spontaneously (Carey, 2000). Thus, students’ roles are making sense of the world and construct their reality. The teacher’s role is only to encourage and support them with this construction (Köse, 2006).

In constructivist approach, instead of the target behavior, the acquirements were emphasized. In order to achieve these acquirements, teaching methods that ensure student’ active participation and collaborative work are adopted in the constructivism. Collaborative learning provides an opportunity to discuss the meaning, share multiple perspectives and change the internal representations of the external reality (Kukla, 2000). When students interrelate with their peers,

collaborate, discuss their ideas, form arguments and negotiate meaning they built knowledge (Vrasidas & McIsaac, 2001). Collaboration in learning is appreciated, since knowledge is developed by means of social cooperation and interaction. Learners obtain new strategies and knowledge of the world and culture through participating in different kinds of activities with others (Kukla, 2000).

The organization of a curriculum has an influence on the teaching method of the content. Researchers claimed that there is a trend to move toward an integrated curriculum. That is, the way of curriculum arrangement moves from behaviorist competency-based curriculum model to constructivist-integrated curriculum model (Knobloch, 2002; Lake, 1998; Shoemaker, 1989). The integrated curriculum model (ICM) was explained in the following lines.

2.1.1. Integrated Curriculum Model (ICM)

Integrated Curriculum Model (ICM) which has been used worldwide to design the curriculum, instruction, and assessment units of study refers to curriculum that is organized in such a manner that it intersects subject-matter lines, bringing together various aspects of the curriculum into meaningful association to concentrate on wide areas of study. In ICM learners broadly discover knowledge in an assortment of subjects related to certain aspects of their environment (Humphreys, Post & Ellis 1981). ICM views learning and teaching in a holistic way and reflects the real world, which is interactive (Shoemaker, 1989). In other words, ICM refers to the connection of all subjects and experiences (Drake & Burns, 2004; Etim, 2005; VanTassel-Baska, & Wood, 2010).

In an integrated curriculum, learning takes place mostly through projects, learning centers, and playful activities that mirror current interests of children (Bredekamp, 1990). Integration helps the teachers to get ways to meet the students' needs and interests (Etim, 2005). There are four approaches to integration—intradisciplinary, multidisciplinary, interdisciplinary, and transdisciplinary. These approaches explained further in the following lines. Figure 2.2 illustrates the curricular integration as a continuum:

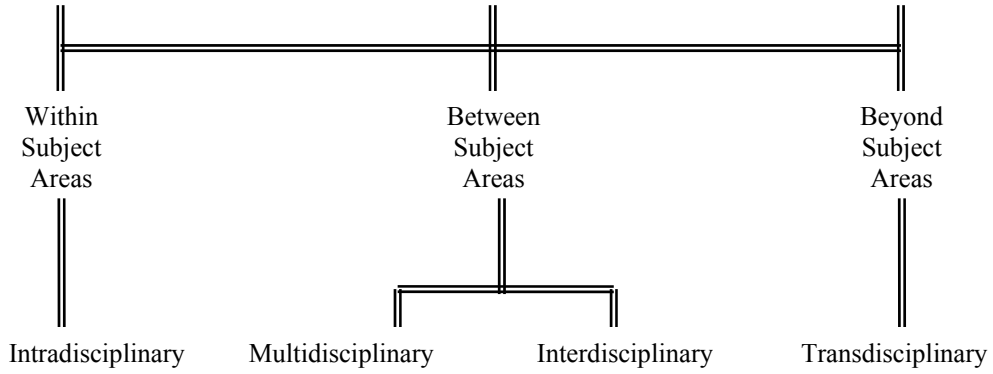


Figure 2.2. Curricular Integration Continuum

Intradisciplinary Approach

Intradisciplinary approach involves putting together the knowledge and skills within one subject area. Explicitly, the sub-disciplines are integrated within a subject area, such as integrated social studies program integrates the perspectives of sub-disciplines such as history, geography, and economics. Through this integration, teachers expect students to understand the connections between the different sub-disciplines and their relationship to the real world. This approach aims at integrating the subject's knowledge and skills into a coherent whole (Beane, 1997; Drake & Burns, 2004; Etim, 2005).

Multidisciplinary Integration

Multidisciplinary approaches concentrate mainly on how different disciplines (i.e., mathematics, science, arts) can complement one-another (Adler & Flihan, 1997; Applebee, Adler, & Flihan, 2007). There are many different ways to create multidisciplinary curriculum, and they tend to differ in the level of intensity of the integration effort (Beane, 1997; Drake & Burns, 2004; Etim, 2005).

A multidisciplinary curriculum is intended to correlate two or more subjects with regard to some organizing theme, concept, topic, or issue. Curriculum planning process begins with identification of a topic or theme, and then followed by the question, "what can various subject areas contribute to the study of the theme?" Although a central theme or topic is used to correlate them, the separate subjects hold their characteristics (Drake & Burns, 2004; Etim, 2005).

Interdisciplinary Integration

Interdisciplinary refers to both curriculum designs and projects that seek to combine two or more disciplines of knowledge. An interdisciplinary integration involves examining how different disciplines complement each other (Applebee et al., 2007). Curriculum planning process begins with particular disciplines and uses them to create new fields of inquiry. The content of these new fields are organized around a common theme.

Interdisciplinary approach focuses on determination of the connections between different disciplines and makes these connections clear to students. Interdisciplinary curriculum designs have also been referred to as "fused" or "cross-curricular. That is, interdisciplinary approaches use different disciplines in combination to solve problems or consider issues that cannot be sufficiently addressed by any one of the disciplines alone. (Beane, 1997; Ellis, 1998).

Transdisciplinary Integration

Transdisciplinary integration begins with a question or project and asks: what do students need to know or know how to do to answer this question or complete this project? Transdisciplinary integration approaches usually concentrate on real-world or real-life contexts to form their questions or projects. In many transdisciplinary units, students generate the key questions under examination (Beane 1997, Etim, 2005). This type of integration is democratic in nature, providing opportunities for students to question, discover, and actively participate in their immediate and global communities. That is, transdisciplinary approach places the characteristics, needs, interests, and personal learning processes of students at the forefront of the learning experience (Ellis, 1998).

Integrated Curriculum Model and Constructivism

Integrated curriculum models closely follow a constructivist viewpoint (Knobloch, 2002). As seen from the literature; today's students need to be critical thinkers, problem solvers and effective communicators in order to deal with

multiple perspectives and continuously changing world. In order to educate individuals with these skills the school curricula have a tendency to change in line with the constructivist approach. Constructivist approach was described in detail in the following lines.

2.2. Constructivism

Constructivism has a major impact on educational practices in the last quarter century (Jones & Brader-Araje, 2002). The roots of constructivism *have been* attributed to the works of Dewey (1916), Piaget (1970), and Vygotsky (1978). It is principally a theory of knowing that completely explains the complexity of the teaching-learning process. Constructivism supports the idea that knowledge is constructed, rather than conveyed by someone else (Marlowe & Page, 2005). That is, knowledge does not exist outside the learner; learners enthusiastically build knowledge by integrating new experiences and information into what they have previously come to understand, adjusting and reinterpreting previous knowledge so as to settle it with the new (Billett 1996; Sherman & Kurshan, 2005; Shunk, 2004). Individual learners construct their own meanings within the context of their own experiences (Fosnot, 2005; Vrasidas & McIsaac, 2001).

Constructivist view takes into account learners' meanings, experience, and meta-cognitive strategies (Reeves, 1997). The learners who bring their ideas, feelings, and beliefs with them are given the opportunity to relate these to new information and reconstruct their existing knowledge. Correspondingly, Glasersfeld (1995) maintained that constructivist models of pedagogy are derived from a philosophy that each individual defines knowledge in relation to his/her own experiences.

According to Jonassen (1997), constructivist approaches intend to generate rich learning environments that allow the students to take part in interpreting the world and give opportunity to them to reflect their own interpretations. For him, the students will have more possession over their thoughts when they allow constructing their own interpretation.

Papert (1981), a student of Piaget's, asserted that the students will be more strongly involved in their learning when they construct something that others will

notice, analyze, and utilize. The students will be confronted with complex issues during the construction process, and they will try to solve problems and learn how to solve problems, because they are motivated by the construction process.

Psychologists and educational scientists agree that making proper scientific explanations is not a direct transmission process, but a constructive process that requires active cognitive participation of the individuals (Hardy, Jonen, Möller, & Stern, 1998). The students have an intrinsic power to understand the world (Billett, 1996) and they need to take part in a process of knowledge integration, in an attempt to restructure their concepts productively (Davis, 2003; Linn, 1995); they need to build links between newly learned knowledge and their existing concepts, by purifying or leaving them if they cannot match.

2.2.1. Constructivist Approaches

Constructivism has been taken in various contexts related to a range of requests of social, political and/or educational thinking. The meaning of constructivism changes according to the viewpoint and context. When constructivism is taken in the context of education, it has philosophical meanings such as personal constructivism as portrayed by Piaget (1967), social constructivism explained by Vygotsky (1978), radical constructivism depicted by von Glasersfeld (1995), constructivist epistemologies, and educational constructivism (Mathews, 1998). Since social constructivism and educational constructivism are considered as most contributing to the integration into current educational approaches, they have had a significant influence on curriculum and instructional design (Jones & Brader-Araje, 2002). There are several sorts of constructivist approaches (Neimeyer & Raskin, 2001); the following lines attempt to explain resemblances and dissimilarities among three critical constructivist approaches—cognitive, radical and social constructivism.

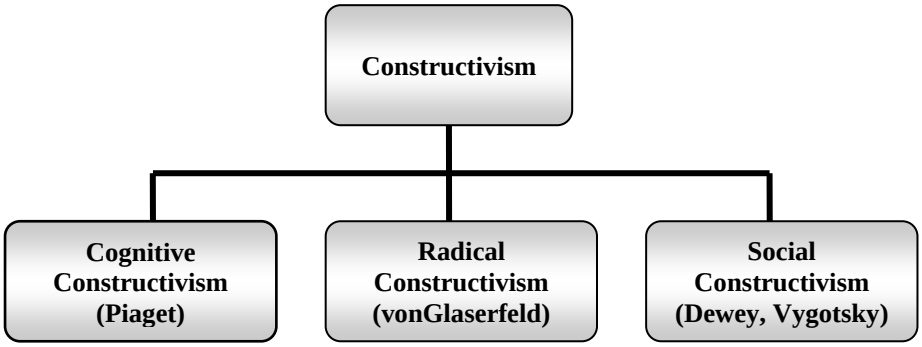


Figure 2.3. Constructivist Approaches

Cognitive Constructivism

Cognitive constructivism is derived from the work of Jean Piaget, a developmental psychologist. According to Piaget (1967), in education teachers must take account of the child's the cognitive development stages. He claimed that individuals cannot be *given* information which they immediately understand and use. Instead, individuals must *construct* their own knowledge. They build their knowledge by means of experience, thus, discovery is the fundamental of learning (Ackermann, 2004; Arslan, 2007).

The teacher's role in a cognitive constructivist classroom is to offer a rich learning environment for the impulsive investigation of the student. When the classroom includes rich materials, the students will be enthusiastic to construct their own knowledge (their own schemas) via experiences that encourage assimilation and accommodation.

Radical Constructivism

As said by von Glasersfeld (1995), knowledge is the self-organized cognitive process of the human brain. Knowledge is seen as a construct—that formed along with the individuals' own experiences—rather than a collection of experimental data (Naylor & Keogh, 1999). Namely, knowledge does not reflect an "objective" ontological reality; it is created by human beings in order to organize the world and to navigate life (von Glasersfeld, 1995; 2008).

Social Constructivism (or Constructionism)

Almost all social constructionists prefer to use the term "constructionism" instead of "constructivism" (Raskin, 2002). The foundation of social constructivism in educational settings is based on Vygotsky's work. He emphasizes the influences of cultural and social contexts in learning and supports a discovery model of learning. This type of model places the teacher in an active role while the students' mental abilities develop naturally through various paths of discovery.

Social constructivists maintain that the process of knowing is an active process involving others and it depends on social interaction (von Glasersfeld, 1992). As said by Vygtosky (1978), learning is best understood taking into consideration others within an individual's world. These continuous interactions between the individual and others called as the *zone of proximal development*. The zone of proximal development allows to assessment of the *intellectual potential* of an individual rather than on what the individual *has achieved* (Vygotsky, 1978, p.86).

2.3. Constructivist Principles

There are several major principles common to most constructivism-based approaches to teaching and learning. The importance of active construction of the knowledge by the learner is a central tenet; conceptualization of the child as passively responding to the environment and learning through directly internalizing knowledge given by others is rejected. Rather, children are inherently active, self-regulating learners. Deep, meaningful understanding occurs when children participate fully in their own learning, with previous knowledge and experiences as the starting point for new learning. Active learning and full participation lead to deeper and richer understanding and use of knowledge, thus promoting meaningful use of what has been learned (El-Hindi, 1998; Açıkgöz, 2002).

Probably the most generally accepted principle of constructivism is that the knowledge an individual has is not passively received, but actively configured by the individual. The second principle is that, the role of learning is to help the

individual operate within his or her personal world (Grabe & Grabe, 2001). Constructivist teachers foster student inquiry and value the students' point of view (Brooks & Brooks, 1999). Students direct their own learning with the necessary scaffolding provided by the teacher (El-Hindi, 1998).

The constructivists have proposed a set of principles that can guide teaching practices and the design of learning environments. The instructional principles based on constructivism are as follows: the aim of each learning activity should be apparent to the learner (Honebein, Duffy & Fishman, 1993); the learning environments should be relevant with the real-world; the goals students bring to the environment should be consistent with the objectives of instruction; instruction should concentrate on solving real-life problems, that is, the learners allowed to engage in scientific activities and problem solving (Wilson, 1996, p.138); help the students to find new ways to solve problems by helping the students to realize the conceptual interrelatedness, providing multiple representations or perspectives on the content. Moreover, the students should be included in decision-making process (Jonassen, 2004, p.11-12). Explicitly, the teacher should discuss the instructional goals and objectives with the students, not impose them on them. In addition, learning should be internally controlled and mediated by the learner; and the teachers allow the students to take the liability of their own learning. Furthermore, the teachers provide means and environments that help students interpret the various perspectives of the world. The students should be given an ownership of the learning or problem solving (Wilson, 1996, p.139). Besides, students should be given the opportunity to assess their own success; assessment should serve as a self-analysis instrument.

The following principles are needed during the knowledge construction process Jonassen (2004):

> …provide the opportunities to help the students realize that the reality can be presented with multiple representations; represent the natural complexity of the real world; concentrate on knowledge construction, not on the reproduction; present real tasks (contextualizing as opposed to abstracting instruction); provide real-world, case-based learning environments, instead of fixed instructional arrangements; promote thoughtful practice; allow context and content dependent knowledge construction; encourage collaborative knowledge construction by means of social negotiation (p.35).

The constructive learning designs emphasize six essential elements: situation, groupings, bridge, questions, exhibit, and reflections. These elements are integral parts of teacher planning. The teachers produce situations for students to explain, decide on groupings process of materials and students, build a bridge between students' prior knowledge and the objectives of the curriculum, support the students to exhibit an evidence of their thinking by sharing it with others, and ask for students' reflections about their learning.

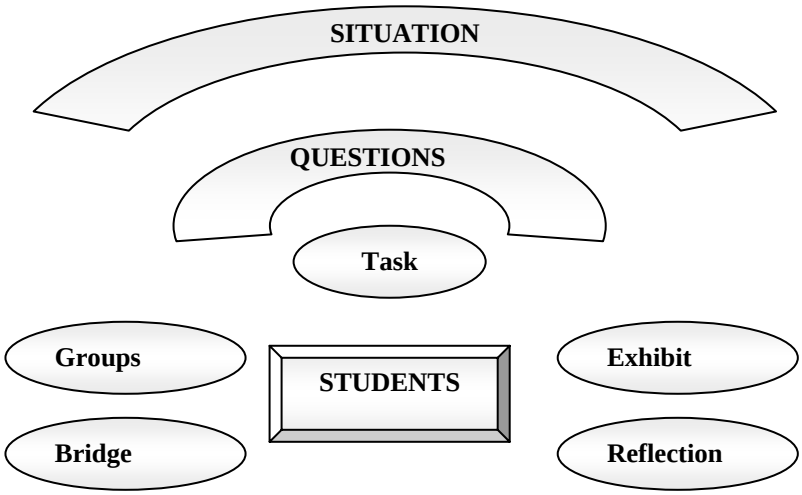


Figure 2.4.The Constructive Learning Design

2.4. Constructivist Curriculum and Constructivist Learning Environment

For proponents of the constructivist approach the design of the learning environment is more important than the sequence of instruction (Jonassen, 1994). Learning is a result of construction, collaboration, reflection and negotiation within a rich context in which learning is situated (Brown, Collins, & Duguid, 1989).

As said by constructivists, learning is an activity embedded in society that is improved in practical, relevant, and motivating contexts. The classroom is no longer a place where the teacher transfers knowledge to passive students, who wait like empty vessels to be filled. Personal knowledge is socially constructed within an active and collaborative learning environment.

The key activity in a constructivist classroom is problem-solving. Students use inquiry methods to ask questions, investigate a topic, and use a range of resources to discover solutions and answers.

Although, the traditional classrooms aim to make the students be quiet and limit their social interaction, thus, make the students nervous and scared; the constructivist classrooms provide a variety of freedoms to the students. That is, the classroom learning environment is a place where students interact with each other, speak without fear or worry, enthusiastically listen to each other, and respect their differences. Knowledge is based on interactions (Kumari, 2009).

As said by El-Sheikh Hasan (2000) the aim of constructivist learning environment is to meet students' diversity, encourage critical thinking skills, make connections between school learning and work and life, and allow students to use their school learning in problem solving and decision making. The constructivist instruction puts educational priorities in accordance with students' learning styles (Jones & Brader-Araje, 2002). In constructivist classrooms students are encouraged to use higher order thinking skills to find meaning in classroom experiences (Richardson, Morgan**,** & Fleener, 2008).

Kukla (2009) claimed that with the intention of entirely engage and challenge the student, the learning environment and the task should imitate the complexity of the environment that the learner should be capable of function in after the lesson.

In constructivist classes classroom management is also viewed from a different angle. Explicitly, classroom management is seen as helping the students to become liable for their learning and to successfully reflect on and manage their learning behavior rather than rewarding and punishing students to control (Putnam & Burke, 1992).

In constructivist learning environments, individual's self-esteem is completely recognized and democratic rules are respected and reinforced. Therefore, the existing social and emotional climate in constructivist classrooms allows for the construction of meanings (El-Sheikh Hasan, 2000). Explicitly, the students are encouraged to share their opinions, represent concepts by using a range of tools and assess the solutions critically. The constructivist learning environments allow the students to have a possession of the learning process, of the problem solving process, and of the problem itself (Crotty, 1998).

2.4.1. Roles of Teachers and Students in Constructivist Classrooms

In the constructivist model, the students are urged to be actively involved in their own learning process (Jeffrey, 2005). The teacher functions more as a facilitator who coaches, mediates, prompts, and helps students develop and assess their understanding, and thereby their learning. One of the teacher's biggest jobs becomes asking good questions. Students are not seen as blank slates upon which knowledge is etched. They come to learning situations with already formulated knowledge, ideas, and understandings. This previous knowledge is the raw material for the new knowledge they will create.

The teacher's role is not to directly give knowledge and information, but to support performance and encourage the construction of influential knowledge (Reid, 1993; Tharp & Gallimore, 1989). To be exact, constructivist teachers generate questions and problems, and then encourage students to discover their own answers. The teachers encourage, motivate, monitor and provide feedback to students; guide students to formulate their own questions (inquiry); allow a variety of interpretations and expressions of learning (multiple intelligences) and support group work and the use of peers as resources (collaborative learning).

Teachers using the learning activities are driven to rethink their teaching role and the beliefs, conceptions, and theories-in-use that support it. Their roles shift from transmitting information to facilitating students' inquiry and knowledge construction. Their conceptions of power, authority, and the learning environment have to radically change. Power and authority have to be perceived not as forcing students to learn but as helping them to manage their learning (El-Sheikh Hasan, 2000).

A constructivist teacher begins with what is known about the child and the child's way of knowing rather than from curriculum or national standards. It is this focus on the thinking of the learners rather than on content that differentiates a constructivist approach from traditional teaching (Brooks & Brooks, 1999). In fact, curriculum cannot be considered to follow a constructivist approach when the focus is on content rather than the child's thinking. Learners revise their thinking, support one another, are responsible for their own learning, and that learning is a community activity. Descriptions of main features of constructivist curriculum

highlight the way in which teachers consider the processes by which children learn, address problem-solving, organize materials, take an active role throughout the day and relate curriculum to the context in which they teach (Branscombe, Castle, Dorsey, Surbeck, & Taylor, 2003).

2.4.2. Constructivist Learning Activities

In terms of instruction, constructivists refuse the teaching of separate skills in a linear sequence. In fact, the learning activities are intended to identify and respect students' diversity and utilize it to carry students to higher levels of learning and development. In a constructivist classroom, students' interaction with the issue changes from a passive to an active manner, where they produce knowledge using their own knowledge, intelligences, communication skills and experiences. Motivation of students enhances, their self-confidence improves, and their personal efficacy strengthens when they feel knowledge is a joint process of constructing and re-constructing experience (El-Sheikh Hasan, 2000). Instruction is a process of supporting that construction rather than communicating knowledge (Duffy & Cunningham, 1996. p. 171).

Constructivist learning activities change the social-emotional aspects of the classroom. Therefore, constructivists advise the teachers to organize their instruction around primary concepts (Brooks & Brooks, 1999) and select problems that are relevant to the students to motivate the students to take possession of their learning (El-Hindi, 1998). Technology has the potential to support constructivist learning and be used for active, authentic and co-operative activities (Jonassen, Peck, & Wilson, 1999).

In constructivist classrooms learning activities constitute authentic learning tasks that attract the attention of students. Moreover, an array of probing and thought provoking questions encourages the students interact mentally and emotionally with the context. During teaching a variety of presentation methods are used that include verbal (oral and written), pictorial, or action modes. Examples of authentic learning tasks are: the completion of an open-ended story, the combining of parts to form wholes, perspective taking, moral reasoning, role playing,

proposing solutions to identified problems, futuristic thinking, and identification of multiple causes and effects (El-Sheikh Hasan, 2000).

In addition, every learning activity invite the students to uncover their own potential, to utilize their experiences and understandings in interacting with the authentic situation and fully participate in the construction of relevant meaning. Learning activities allow the students the opportunity to work together, fully participate, and make use of questioning and dialoguing in resolving disagreements and reaching an agreement (El-Sheikh Hasan, 2000).

The learning activities act in response to the different needs and learning styles of the students. With the intention of accommodating students' individual preferences to perceive, process, and judge information (Kolb, 1984; Mamchur, 1996); each learning activity is prepared in different forms, when possible. The students intelligences are activated, their competence and self-concept increases, when the learning activities match the learning styles of them (Kolb, 1984; Snow, Corno, & Jackson, 1996). In the same way, group work supports students to work together in group tasks. All students in group working activities have an important role based on their own ability, interest and experience (Cohen, 1994).

In a constructivist learning environment the purpose of learning activities is not only to build up students' consciousness and understanding but also to engage them in transformative social action. Consequently, each learning activity is action oriented, as much as possible (El-Sheikh Hasan, 2000).

2.4.3. Constructivist Assessment

The assessment practices need to be reformed when a constructivist approach is put into practice elementary education. In an attempt to assess student learning to utilize merely standardized tests is not suitable the student-centered constructivist approach (Duffy & Cunningham, 1996; Jonassen, 1992). The traditional assessment methods (i.e., written examination) do not efficiently assess critical thinking, creativity, and reflection (Lewis & Johnson, 2002). On the other hand, alternative assessment methods (i.e., peer assessment, portfolio, and reflective journaling) allow authentic and contextualized assessment that supports thoughtful learning and skills development (Boud, Cohen & Sampson, 1999; Cowan, 1998,

Gipps, 1999; Race, 1998). Brooks and Brooks (1999) claimed that constructivist assessments allow students to improve their learning and help the teachers to monitor the student's current understanding.

Assessment activities, which can represent students' learning in constructivist classroom, can be categorized as follows: The written tests/examinations, performance assessment, portfolio assessment and authentic assessment methods (Gagnon, & Collay, 2006, p. 156). The written tests/examinations should focus on thinking process rather than ownership of information. In performance assessment the students are presented with a problem, and respond it by doing something—practical work, experimental work, oral presentation (Brualdi, 1998). A portfolio assessment indicates the students' learning process and their advancement over a period of time. This kind of assessment concentrates on the student's self-learning abilities and communication with others. It is cumulative and continuing collection of student works that are selected and commented on by the student, the teacher and/or peers, to assess the student's progress in the development of a skill (Simon, & Forgette-Giroux, 2000). Group assessment concentrates on the quality of the production as well as students' performance on their participation during the learning process. Moreover, teachers use observation and oral interactions in order to monitor students learning. These kinds of assessment methods allow continuous assessment of students' learning.

Aforementioned constructivist environments promote the creation of multiple perspectives within a variety of contexts. Since, there is not a single conception of and there is not one correct way of solving a problem, students are encouraged to employ multiple ways to solve problems and explain the logic of their solutions. In order to assess those multiple perspectives, it is necessary to employ various assessment methods. Therefore, in constructivism, portfolios (samples of student work) and authentic assessment methods are used (Duffy & Cunningham, 1996; Jonassen, 1992). However, the traditional tests may also be used but they should not be the only method of evaluation. Other assessment techniques include the collection of students' projects and assignments, students' self-evaluations, reflective journals and class presentations of sample lessons (Vrasidas & McIsaac, 2001).

Researchers stated that following principles should be considered utilizing authentic assessment methods: Authentic assessment should require students to develop responses rather than select from predetermined options; illustrate higher-order thinking in addition to basic skills; directly evaluate holistic projects; synthesize with classroom instruction; use portfolios collected over an extended period of time; come from comprehensible standard made known to students; allow for the likelihood of multiple individual decisions; concern the classroom learning; help the students to assess their own work (i.e., asks students to examine their strengths and weaknesses and to set their own goals to further their learning); be learner-specific, natural, and flexible, rather than uniform, standardized, impersonal, and absolute; be criterion-referenced rather than norm-referenced; and be based on performance (Campbell, 2000; Costa & Kallick, 1992; Prestidge & Williams Glaser, 2000; Tanner, 2001; Wiggins**,** 1990).

2.5. Curriculum Reform in the World

Researches on the educational reform movements in the world were reviewed in the following lines.

In his study, Otto (1994), investigated the reform of the social studies curriculum in Kentucky. In 1989, the Kentucky Supreme Court directed the General Assembly to generate an innovative, well-organized system of public schools. The empirical evidence was found to support the reform movement (Kentucky General Assembly, 1990). The researchers found that on primary school level the social studies was taught as a divide subject, was dominated by textbooks, and invited only passive participation. Kentucky changed not just parts of the education system but the whole: curriculum, testing, funding, and management according to research results. The researchers recommended that instruction should be appropriate for student development, curricular topics should be integrated. In addition, project work, multidimensional assessment, and whole language should be a part of primary school program. Accordingly, the social studies curriculum was reformed and now includes thematic teaching units, cooperative learning, multidimensional assessment, interdisciplinary teaching, and local control of curriculum development (Otto, 1994).

Similarly, during the 2000–2002 periods in Greece, president of the Pedagogical Institute made an effort to change education system. They had created a program called 'Flexible Zone Program' that provides thematic approaches to learning in Nursery, Primary and Secondary Education. The flexible zone emphasizes the development of initiative and critical thinking; a cooperative and multidisciplinary approach for learning; and the improvement of collaboration and of student effectiveness via proper activities and projects. However, these changes did not bring something new to the philosophy and the character of the school program (Flouris & Pasias, 2003).

In the same manner, in Mexico, Greybeck, Gomez and Mendoza (2004) investigated the curriculum reform in higher education, in 1997. To make education more competitive internationally, the Monterrey Institute of Technology and Higher Learning anticipated some changes in teaching-learning process such as the reformation of the courses; a student-centered model; larger use of technology; and the development of certain abilities, attitudes, and values among students. The Institute aimed that the activities in every course help the acquisition of certain skills such as collaborative learning, critical thinking, independent learning, self-evaluation, integrity, accountability, respect for others, and social commitment. The study showed that the reform efforts have an important influence on students' attitudes toward learning strategies.

Jie and Desheng (2004), in their study of the current curriculum reform of moral education, found that the Moral Education course concentrated on students and their lives, in order to make the course and the textbooks supplementary for students in their moral development.

In a similar fashion, Zhan and Ning (2004) highlighted three crucial principles behind the curriculum reform; new curriculum should focus on the developing lives of students; curriculum characteristics with ideological, humanistic, practical and integrative dimensions; and the objectives of developing feelings, attitudes and value orientations, competencies and knowledge.

In their case study Lewin, Mavers, and Somekh (2003) investigated the new practice in the utilizing ICT and its potential for improving learning. They asserted that, so as to increase the potential of teaching, curriculum reform was essential. For them, curriculum reform stress changes from existing curriculum and pedagogy to

critical thinking and knowledge construction. They concluded that, technology played a key role in transforming learning. Since the internet was a source of huge amount of information, with multiple perspectives it helped to meet the different needs of students. According to the authors, the nature of the curriculum should be challenged and should take advantage of what technology offers.

Verhoeven and Verloop (2002), in their case study examined whether the Dutch curriculum reform in classics integrated in teaching practice in relation to both curriculum subjects and assessment practices. They claimed that no matter how the objectives are innovative, the curriculum reform can not be successful if the assessment practices are not innovative. Their findings demonstrated that the teachers continue to use traditional assessment methods, thus they assess only surface information rather than deep understanding. Their study revealed that traditional assessment methods weaken to the introduction of major curriculum change. They claimed that in order to adapt the curriculum changes the teachers need to learn how to employ alternative assessment methods when assessing students' higher order skills.

In the similar style, Williamsa and Charlesb (2008) studied the early childhood curriculum development in Caribbean Community (CARICOM) countries. They stated that altering learning environment and teacher education were essential pre-conditions for effective curriculum reform. They recommended that teachers as practitioners of curriculum reform should be supported in constructing educational environments to reflect the culture. The curriculum should be based on the notion that students are active learners. Thus, for effective learning children should given the opportunities to engage in learning with materials and interact with each other and with adults.

2.6. Curriculum Reform in Turkey

Today, in order to increase the quality of an education, the education programs are reviewed and improved in Turkey (Angın, 2008; Bıkmaz, 2006). Şimsek and Yıldırım, (2004) claimed that education reform is influenced by changes in economic and social conditions worldwide. Thus, the curricular

innovations pointed out in this section are reactions to changing educational, economic, and political conditions in Turkey.

The purpose of primary education is to ensure that every child acquires the basic knowledge, skills, behaviors, and habits to become a good citizen, is raised in line with the national moral concepts and is prepared for life and for the next education level parallel to his/her interests and skills. The idea of learning as well as teaching has changed its meaning throughout history, and most recently, it has become increasingly student-oriented (Bıkmaz, 2006; Köse, 2006). Therefore, Turkish basic education faced the issue of modernizing the curricula and preparing students to meet changing workforce needs. The results of national and international research studies demonstrated an emergent need for change in Turkey.

In her study, Köse (2006) asserted that students in Turkey are regarded as rote learners, who are passive, dependent on the syllabus and teacher, and who do not initiate their own work. They are more focused on the products of their learning; that is, quizzes, tests, and grades rather than on the process of learning. However, students should have a more important role in learning than simply memorizing and recalling information on tests.

According to results of national and international studies, the Turkish students' academic performances are significantly lower than other European countries' students. That is to say, the Program for International Student Assessment (PISA) and Progress in International Reading Literacy Study (PIRLS)—clearly displayed that student learning is noticeably below most European and OECD countries. In the 2001 results for PIRLS, Turkish fourth-graders scored significantly below most OECD countries. Similarly, in PISA 2003, which assesses students at age 15 at the end of basic education, Turkish students' academic performances significantly below the OECD average on all measures, and second to last among OECD countries.

As a result, elementary and secondary education in Turkey has undergone a process of reform that aimed at improving the quality of school learning and teaching, modernizing the academic output of the schools and closing the gap between Turkey and other OECD countries (OECD, 2007).

The rationale for the change includes the need to keep up to date with developments in science, technology, and pedagogical approaches and increase the

relevance to the economy and democracy. The changes also aim to ensure the integrity of the compulsory education curriculum with conceptual integrity on both vertical and horizontal axes, and to align with European Union practices.

The process of comprehensive curriculum reform in primary schools began with foundation courses such as Mathematics, Turkish, Life Skills, Social Sciences and Science and Technology at first level of elementary (grades 1-5). The new curriculum was piloted in selected schools in selected provinces and started to be implemented in 2005-2006 academic year in all schools (Akınoğlu, 2008; Babadoğan & Olkun, 2006; Wort, 2007).

The aim of current curriculum is to train students as intellectuals. That is, after completing primary education students are expected to be able to use meta-cognitive skills and to be able to use gathered information to articulate opinions and form new ideas.

The fundamental changes include the thematic approach to content areas, the use of instructional strategies to promote deep learning, integrated assessment and meaningful program evaluation. The basic approach of pedagogy has been changed as well. Consequently, the basic principles of constructivist approach such as active learning, multiple intelligence theory, and authentic assessment methods have been emphasized in teaching and learning process (Akınoğlu, 2008; Wort, 2007).

Since the basic idea behind these curricular reforms was to change the curriculum from a subject-centered to a learner-centered one and change the pedagogies from a behaviorist to a constructivist one (Akınoğlu, 2008; Babadoğan & Olkun, 2006). In general terms, activities are planned in a constructivist fashion while considering the individual differences in learning, and leaving room for localization of the activities.

All curricula developed for grades 1 to 5 were to be implemented in the 2005-2006 academic year throughout the country. The emphasis on student-centered learning requires a change in teaching and learning from the mainly memorizing approach to more active learning for students (Akınoğlu, 2008; OECD, 2007).

The researchers investigated the current curriculum and compared to previous curricula (Akınoğlu, 2008; Curriculum Review Commission [CRW], 2005; Yaşar, 2005). They maintained that the 2005 curriculum has the following characteristics:

- The curricula exhibit an innovative perspective in general,

- Thematic approach is employed in the organization of contents and the learning domains are defined within this framework,
- Terminology used for the learning outcomes is extremely different (newly used "acquisitions" vs. former "objectives, targets, target behavior").
- The new curricula accentuate skills such as critical thinking, creative thinking, communication, problem-solving, research, and decision-making.
- The learning-teaching processes and the role of the teacher are elaborated in a more detailed manner,
- Use of instruments and material is promoted and more concrete examples are given in relation to this project,
- Measurement and evaluation are related not only to the outcome but also the process (CRW, 2005).

In the 2005 curriculum, the subject matter not directly instructed as ideas or skills any more. Students are not seen as sponges absorbing information or containers to be filled with information but as dynamic individuals who have their own perceptions, expectations, and learning styles. These significantly influence what they learn and how they learn and develop (Williams, 1999). Accordingly, they allowed participating in the authentic learning tasks with their minds, hearts, and bodies. The activities encourage the students to develop their own understanding, share their opinions in order to contribute to the topic, and use of the ideas and skills constituting the subject matter. To be authentic, learning tasks have to address students' current concerns, motivate them to contribute to relevant personal experiences, and put them in life-like situations (Bıkmaz, 2006).

2.7. Process of Implementation of Curriculum Reforms

The process of implementation of curriculum innovations is two-fold. First, it involves changing teachers' conceptions and beliefs, and second, it requires training teachers on the new skills that are necessary for effective implementation of the

curriculum. Effective implementation of comprehensive curriculum reform occurred when education stakeholders have an ownership and understand the vision and implications of the program for teaching and learning (Feldman & Tung, 2002).

Administrators', teachers' and students' opinions are building stones of curriculum innovation and implementation. The literature strongly suggests that the rate of adaptation of innovations in organizations is influenced by the stakeholders' perceptions of the innovation. Since their pedagogical views have an influence on their approach to new curriculum, they are the key to the success of the current reform movement.

Recent research on teaching and teachers has provided evidence that the classroom teacher plays a fundamental role in any formal educational environment (Trae, 2008). In fact, teachers' classroom practices seem to represent conceptions and beliefs that are opposing to those of the constructivist learning activities. Teachers' reactions to the new activities were mixed. Most teachers found the new activities enjoyable and showed interest in trying out the pedagogy in their classrooms; others thought the pedagogy was impractical and wasteful of academic time that should be spent on teaching "real" content. Thus, teachers cannot simply be given the learning activities and expected to implement them in their classrooms.

Means (1994) asserted that history of education reform has shown that innovations have failed dramatically when teachers input was not incorporated and when teachers were not actively involved in the innovation.

As Fullan and Pomfret (1975) have shown in their review of research on curriculum implementations, teachers usually interpret and implement the curriculum innovations to fit their conceptions and beliefs. Correspondingly, House (1979) argued that research on education and reform indicated that to realize educational innovations necessitate the close collaboration of the teachers involved.

In his research, El-Sheikh Hasan (2000) depicted that teachers' have concerns about how to deal with students' behavior during the activities; how students react to the activities; how to reorganize the physical setting of the classroom to utilize cooperative learning, and how to find time to cover the subject curriculum. Therefore for an effective implementation of curriculum change these concerns should be taken into consideration.

Many researchers insisted that since teachers are the critical agents for bringing changes into their classrooms, the teachers themselves should be the focal point of analysis and source of evidence regarding the introduction of curriculum reform (Doyle & Ponder, 1977; Gross, Giacquinta & Bernstein, 1971).

In their recent research Cheng et al. (2009) claimed that teachers' beliefs have great influence on their classroom practices. Similarly, Hall and Hord (2001) maintained that teachers' values and perceptions influence the way a reform is interpreted and implemented. In their study Hand and Treagust (1994) discovered that when teachers believe the worth and effectiveness of constructivist approach in classrooms, their opinions regarding teaching and learning change as well.

In their research, Ross, Cornett and McCutcheon (1992) argued that the curriculum researchers and designers had ignored the power of teachers on their curriculum implementation generally. Tabachnick and Zeichner (1984) also expressed how teachers' beliefs and attitudes have an influence on their teaching and learning process and become apparent in their behaviors.

In the recent document of Common European principles it is announced that the teachers' competences and qualifications have a key role in the development of the education system and in the implementation of the reforms which can make the European Union the highest performing knowledge-driven economy in the world by 2010 (EU Directorate-General for Education and Culture, 2006). In his study Korkmaz (2007) asserted that although the perceptions of teachers are one of the most crucial elements of the teaching and learning system, they have not been revealed enough.

Therefore, there is an obvious need to scrutinize how teachers implement current curriculum in their classrooms as a key element of the constructivist curriculum reform. Furthermore, there is a need to examine and review the progress of change and suggest actions for continuous improvement. The essence of this study is to investigate how teachers perceive current curriculum, how they have integrated the principles of the current curriculum into their instruction and what concerns teachers have about it. Based on teachers' perceptions, practices and concerns, findings of this study will contribute to developing, updating and strengthening the current elementary curriculum, by means of catering to the authentic professional needs of teachers at the frontier. Moreover, the study

provides the MONE and school administrators with information regarding the design of interventions for effective curriculum adoption and implementation. In addition, this study will also provide important insights for scrutinizing and reviewing the curriculum reforms in Turkey for policy makers.

Correspondingly, even though educational reforms target students, and students involved in the process and outcome assessments of curriculum reform, students are rarely considered as primary initiators, leaders, and reporters in evaluating curriculum reform (Barbeau, Quesnel & Des Marchais, 1990; Regnier, Welsh & Quarton, 1994; Rono, 1997).

Zhu, Valcke and Schellens, (2009) inspected student opinions about group discussions, critical thinking, problem solving, peer learning, interaction and getting/giving help in the actual learning environment, and their preferences pertaining to an ideal learning environment. They declared that so as to assess the character and excellence of educational innovations, the student opinions about the learning environment are very important.

In their study Natis, Follet, Menard, and Des Marchais, (1999) investigated how students perceive the change from traditional curriculum to progressive one. They found that most of the students thought the transition quite difficult. Similarly McCollum (2006) claimed that students' beliefs, attitudes, and perceptions, called as students' 'inner workings', influence their actions, which have an effect on their environment. Since the beliefs, attitudes, and perceptions of students have an impact on their learning and behaviors in school, it is crucial to recognize those inner workings.

In the same way, administrators' perceptions of instructional practices in their schools influence curriculum reform efforts. However, acceptance of a new educational approach is not a quick process. It is difficult to convince teachers, students, parents and administrators that the new curriculum and teaching strategies will be helpful for students to achieve the tests that are required to continue education—such as placement exams, high school entrance exams, and university entrance examination in the Turkish context.

There is a noticeable need to study teachers, students, and administrators' opinions about the implementation of curriculum. Therefore, investigation of the

stakeholders' opinions on the curriculum implementation is a fairly valuable approach to reveal the impacts of change process.

Since the administrator, teachers, and students are the primary agents of change, investigating their opinions is a good place to start. The results of this research will help reform the teacher education programs to better prepare teachers take advantage of the various teaching methods, and technologies and successfully integrate them in their practice. In addition, the administrators, teachers and students recognize the value and the capability of the new curriculum.

According to Sirotnik (1987), careful examination of curriculum activities, processes and outcomes at different levels (personal, instructional, institutional and social) and using various data sources (teachers, students, administrators, observations, documents, etc) are crucial aspects of curriculum evaluation. In other words, a change in teachers', students', and administrators' opinions and understandings is an important part of any educational innovation. By qualitatively investigating teachers' beliefs in current elementary education goals and observing a teacher's routine classroom practice, this study helped to gain an understanding of the connection between these two factors in elementary education reform. The findings will be helpful in understanding the potential impact of constructivist curriculum on student outcomes and also in suggesting ways to improve the instruction.

A new curriculum can be considered as an educational initiative. The purpose of an initiative is to find solutions to specific educational problems or to improve some aspects of the education system (Worthen, 1991). In order to reveal to what extent, an innovation has been put into practice, it is necessary to evaluate the implementation of the newly developed or changed curriculum. The curriculum evaluation is an integral part of the curriculum change or development process (Love, 2004).

2.8. Implementation (or Process) Evaluation

Evaluation refers to judge or determine the significance, worth, or quality of a thing (Worthen, 1991). Love (2004) asserted the results of program evaluation

studies show that many programs are not producing the positive outcomes that their sponsors and other stakeholders expected. He maintained that the programs fail because they were not implemented in the way that they were intended to or they were not used at all. Implementation (or process) evaluation helps the evaluators to identify what worked and what did not work to produce the intended program outcomes (Bickman & Heflinger, 1995; Gomby & Larson, 1992). Implementation evaluation is usually conducted as a separate project by experts. The evaluation process may involve stakeholders, but not integrated into their daily routine. This evaluation provides information to the stakeholders about the performance of program (Rossi, Lipsey, & Freeman, 2004). The purpose of implementation evaluation is to identify how the program was implemented, who is included and what problems were faced (Gomby & Larson, 1992).

Leithwood (1991) explained the purpose of implementation evaluation as:

> Implementation evaluation may also be designed to help specify the practices implied by the innovation; identify those conditions under which implementation is likely to succeed; including problems likely to be encountered under those conditions and strategies available for their resolution; determine the feasibility of innovation implementation; including the capabilities required of the implementers and whether policy changed are warranted in the light of unintended effects; and decide when the innovation has been sufficiently well- implemented to warrant an assessment of its effects on student learning. Implementation evaluation providing information about these issues assists with management decisions (Leithwood, 1991, p.445).

Implementation evaluation refers to the extent to which curriculum anticipations become a reality. This evaluation can be conducted for three purposes:

1. *Goal-based evaluation* refers to comparison of the (immediate) curriculum outcomes with set (anticipated) goals;
2. *Implementation evaluation* refers to comparison of curriculum events (content, instructional actions, learning experiences) with curriculum plans (anticipated curriculum events); and

3. *Rationale-based evaluation* refers to comparison of different elements with the rationale (Carl, 2009, p. 152).

Conducting an implementation evaluation requires to follow the general steps of evaluation planning and implementation: (1) deciding who will be involved in the evaluation, (2) assessing evaluation resources; (3) describing the program for evaluation, (4) identifying and prioritizing the evaluation needs, (5) defining evaluation questions; (6) determining the evaluation measures, (7) determining your evaluation design, and (8) ensuring that the evaluation resources are sufficient. If not, return to Step 4 (World Health Organization, 2000).

In implementation evaluation, data collection instruments include interviews, questionnaires, and direct observations. The decision of the determining the appropriate data collection method depends both on the purpose of evaluation and the elements of implementation that are being assessed. For example, in order to assess the implementation of changed instructional methods, the classroom observation might be an appropriate method of data collection.

Implementation evaluation might be appropriate for a relatively new curriculum (Rossi, et al., 2004). The evaluation process is a fundamental and critical activity and needs to be thoroughly conducted in any phase of the curriculum change or development process. In order to gather as much data as possible to understand the whole picture of the implementation of LSC an implementation evaluation study was conducted. Therefore, the existing practices were described in order to clarify the nature and degree of the implementation of LSC.

2.9. Use of Creative Drama as a Method of Investigation

Over the last few decades, the arts, including drama, have become meaningful methods of inquiry in qualitative research (Barone & Eisner, 1997, 2006). Ethno-drama has been identified as an effective and innovative qualitative research method and dissemination instrument which aims to develop and notify society through dramatic performances. Although it is quite new and unfamiliar,

researchers are increasingly using ethno-drama in their studies. However, there are few researches into the use creative drama as means of data collection.

In his study, Belliveau (2006) used drama as a method of investigation, as well as a way of documenting the learning. He wanted to search out the different perspectives within the collective pre-service teacher process. His paper investigated the use of drama as a way to scrutinize as well as represent findings of a research project in teacher education. Instead of analyzing data and reporting on the research in a traditional academic essay, he started an arts-based approach by playwriting data findings (Saldana, 2003, 2005). Similarly, Gallegher (2007) asserted that with theatre-based research called as performed ethnography, ethno-drama, arts-based research data is both submitted and disseminated more powerfully and effectively than the traditional research report.

In his article Sanders (2006) scrutinized the arts-based educational research (ABER) by reviewing some of the disciplinary distinctions in its conceptualization as a methodology, and in reviewing how its methods are used and performed. In their study Ferguson and Thomas-MacLean (2009) assumed that ethno-drama would be an innovative and meaningful way to document and present their results. They employed an auto-ethnographic approach to describe their experiences with ethno-drama. They question the traditional view of successful research as being a linear, straightforward process. Consequently, their study revealed that there is a need to utilize non-traditional methods for distributing research results. They affirmed that participatory research projects integrating non-traditional, creative, and qualitative methodologies can produce results which are unanticipated or different from original research proposals.

Acccording to Saldana (2005) ethno-drama is more reasonable and reliable way of research documentation. It is an alternative and an experimental data collection methods rather than fieldwork reporting. An ethnodrama includes significant selection of narratives that collected through interviews, participant observation, field notes, record books, print and/or media materials (i.e. diares, television boradcasts, newspaper articles, and court transcripts). In addition, Ferguson (2009) stated that ethno-drama is an effective technique to present information and it is also a technique which sensitively establishes a link between researchers and participants.

McCaslin, (2006) maintained that drama is a shared activity in which each participant's contribution is needed to the whole. No special equipment, studio, and stage are necessary for creative drama; only time and a well-prepared and excited leader are adequate in order to guide the session are necessary. Sincerity, sensitivity, and intelligent planning are the most important components of an effective performance. In addition, drama can be adapted to all ages and abilities. It is a means of self-expression and an opportunity to think independently.

During the drama sessions the students were expected to act, imagine, and reflect on individual experiences, real or imagined (Pinciotti, 1993). Drama involves the participants the most fully: intellectually, emotionally, physically, verbally, and socially (McCaslin, 2006). When participate in creative drama activities the students feel comfortable and express themselves freely. Creative drama includes several processes such as role play, animation, improvisation, dance, and acting. For Courtney (1982), play, acting and thought are interconnected processes. These processes help individuals to test reality and throw away their concerns. Since creative drama principally based on plays, it is one of the most appropriate ways sharing children's experiences and perceptions (McCaslin, 2006).

2.10. Use of Stimulated Recall Interview

The stimulated-recall interview is a method that has been used in attempts to discover what goes on inside informants' heads during the teaching- learning process (O'Brien, 1993). Actually, stimulated-recall interview is not a separate technique but is an additional means of gathering data using interviews. Stimulated-recall is one of the subset of various introspective methods. Specifically, it helps to elicit the thinking processes that exist when performing a task or activity (Gass & Mackey, 2000).

The stimulated-recall interview largely anchored in data that is collected though observations. That is, stimulated-recall interviews are conducted after the observations (Shekedi, 2005). This method based on the assumption that it is possible to observe the internal processes like external real-world events. When a stimulus was given the individuals they can remember their internal thought

processes and can verbalize those processes (Gass & Mackey, 2000). The rationale of stimulated recall interview is that if a large number of cues or stimuli are presented, it allows a participant to remember a situation clearly and definitely that occurred in the past (Shavelson, Webb, & Burstein, 1986). That is, those clues or stimuli (e.g. video recording) help the participants live that situation again and comprehend the meaning of the original situation (Bloom, 1953). Stimulated-recall interview seems to be the best way to reach the informants' perspectives (Shekedi, 2005).

2.11. Reform Process of the Life Sciences Curriculum

During the preparation of Life Sciences Curriculum (LSC) the previous curriculum and existing situations were reviewed in the light of following constituents: (1) the qualities which are to be acquired by individuals through the Turkish National Education and primary education acquisitions in accordance with the constitution, laws and regulations, (2) the educational acquisition set by Atatürk, (3) the traits or characteristics which are aimed to be formed in individuals through education according to international organizations—such as the UNESCO and UNICEF— (4) the qualities which are offered to individuals through educational processes in many countries, (5) the personal attitudes which are seen appropriate to be acquired by individuals through education for the development plans prepared by the State Planning Institute, (6) the viewpoints expressed by teachers coming from various provinces of Turkey to the Board of Teaching and Schooling of the MONE in the preparation process of the 1998 teaching curriculum for the course of Life Sciences and recommendations given at the end of examination of previous curricula for this course and the skills, and (7) the skills determined by the specialized commissions of the Board of Teaching and Schooling of the MONE, including commissions of Life Sciences, Science and Technology, Social Studies, Turkish language, and Mathematics (MONE, 2005, pp. 6-7).

This course existed in 1924, 1936, 1948, 1968, and 1998 curricula. The recent curriculum has developed and changed in 2004 by Life Sciences Specialization

Commission that created by the Board of Education (Özdemir &Yıldız, 2006; 2008).

In the literature many researchers studied the historical development of Life Sciences Curriculum. Uğur (2006) scrutinized the Life Sciences curriculum according to teachers' views. He affirmed that the teachers had positive attitudes towards course content. However, they thought that there were some problems with the measurement and evaluation of LSC.

In the same way, Özbey (2001) investigated the reflections of 1948, 1968, and 1998 Life Sciences curriculum on the textbooks. She affirmed that when determining the general goal of 1998 Life Sciences Curriculum, children's interests, needs, abilities and learning capacities were taken into account. The 1998 LSC was based on the behaviorist approach in which phenomenon is divided into small parts, and each part is analyzed separately rather than holistic viewpoint.

Bektaş (2001) examined the content and learning methods of 1998 Life Sciences curriculum. He claimed that the content is most important aspects of the curriculum. Therefore, when determining the content of the LSC the students' needs and interest taken into consideration.

In his study Gülaydın (2002) claimed that the objectives of the 2005 LSC were not adequate to enable the students gain scientific thinking skills, problem solving skills and collaborative learning habits. She also asserted that in the LSC the units were not attracting the students' attention.

Özden (2006) compared 1998 Life Sciences curriculum with 2004 Pilot Life Sciences curriculum. She found that there were significant differences between 1998 and 2004 Life Sciences curriculum in relation to content and acquisitions of the curricula. However, she did not explain what the differences were in content and acquisitions of LSC.

Recently, Şahin (2009) scrutinized the evolution of the Social Studies Curriculum from 1923 to present. He revealed that after reforms the content of the Life Sciences curriculum was gradually increased. He asserted that the new curriculum reform movement was different from the previous reforms. That is, this reform focused on student-centered instruction and emphasized teachers' guidance role.

2.11.1. LSC Vision

The vision of the Life Studies Curriculum is determined by curriculum development committee so as to educate students

- who like learning,
- who are at peace with themselves, their social environment and the nature,
- who know, preserve and develop their country, nation and themselves,
- who have the skills and basic information necessary for life, and,
- who are happy individuals (MEB, 2005; Özdemir & Yıldız, 2008, 2009).

2.11.2. LSC Content

Schools do not only educate students academically, but also they play a crucial role in their social development and self-concept. Although social skills are very important to a student's educational success; many children enter primary education lacking in even the most basic social skills. That is, achieving high grades is not enough for children to become social beings, comfortable with themselves and with others. Since lack of social skills is probably the biggest factor contributing to low academic success, development of social skills needs to be a part of instruction in every classroom, in every grade and subject. Since social development is very important in the early grades, the Life Sciences course is a pivotal course for the 1st, 2nd, and 3rd grade in the first stage of the primary education. As can be seen Figure 2.5, the content of Life Sciences course is composed of arts; social sciences (history, geography etc.); values and opinions; and natural sciences.

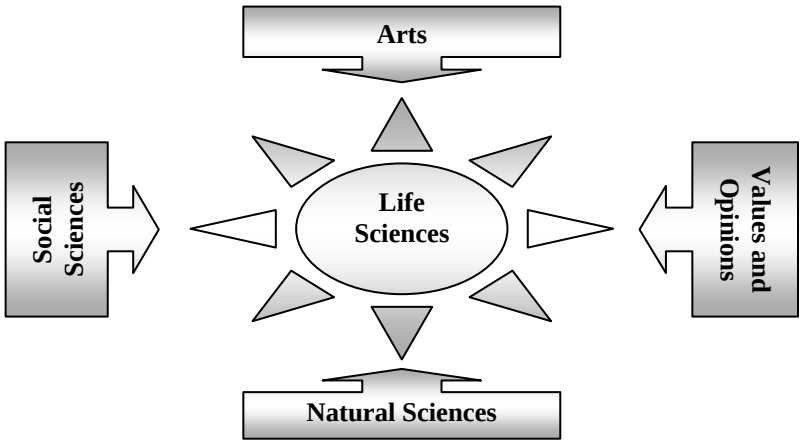


Figure 2.5. Content of Life Sciences Course (Adapted from Sönmez 1996).

Students in the first three years of primary education perceive life as a whole. For the primary school students there is not a single event or a single case. They recognize the cases and events in their environment as a whole. For this reason the courses in Turkish education system are not separated as social sciences and science and technology. Life sciences course is a combination of social sciences, natural sciences, arts, contemporary thinking, and values (Sönmez, 1996). It is the foundation of the social studies and science and technology lessons in the primary school (Aladağ & Aladağ, 2009).

Life Sciences course is based on whole teaching approach. Arıbaş and Yılmaz, (2004) emphasized that Life Sciences course should be intertwined with the real life and give priority to the current issues**.** In this course students learn how to investigate the natural and social environment around them. Besides, the course helps them to know themselves; understand the environment and the events in the environment; find out the way of living better; know the place of the materials around them and learn how to use those materials (Sönmez, 1996; Şahin, 2009; Özdemir &Yıldız, 2006, 2008).

In Turkey the Life Sciences and Social studies course are designed as citizenship education program which establishes suitable aims for responsible citizens in democratic Turkish society through its content by relating history, geography, and citizenship knowledge and present life-long citizenship skills (Barth & Demirtaş, 1998).

The Life Sciences course provides students with appropriate challenging activities to engage in the practice of social skills. Life Sciences, is a process to construct a bound with natural and social reality by verification, and is the knowledge which obtained after that process (Sönmez, 1996). To be precise, the content of the Life Sciences course should be chosen from individuals' environment. Life Sciences course aims to teach the students to become more aware of themselves as individuals and also of their place among other humans (social animal) and to respect to their nation and country. The course also designed to emphasize the importance to family and to develop the time perception. Students select and filter the new knowledge in a meaningful way in accordance with their life experience (Bıkmaz, 2006). Moreover, it helps the students to recognize their environment and to adapt the community. Additionally, it provides background

knowledge for the higher level of education. In addition to provide basic life skills, life sciences course aims to help children to acquire positive characteristics (Özdemir & Yıldız, 2009; Yıldırım, 2006). Actualization of the goals mentioned above is only possible when the Life Sciences course is implemented in an effective way.

The LSC was developed in an attempt to ascertain a comprehensive thematic structure which is student-centered, enables students to engage in instruction processes actively, considers children's needs in actual life and makes learning by having fun possible. Unlike the previous curriculum, in the current LSC acquisitions have been defined rather than objectives. The acquisitions refer to the expressions which include students' knowledge, skills, attitudes, and values as well as their directly observable behaviors (MONE, 2005).

2.11.3. LSC Themes

The content of the Life Sciences course is organized around three thematic units. The themes represent typical topics and the names of the three themes have remained the same throughout the three years. Each subject and necessary time of the day and week to be practiced it are given within the themes. First theme is 'My School Excitement', second is 'My Unique Home', and third one is 'Yesterday, Today and Tomorrow' (Özdemir & Yıldız, 2009; Yıldırım, 2006). Figure 2.5 illustrates the relationships between the themes.

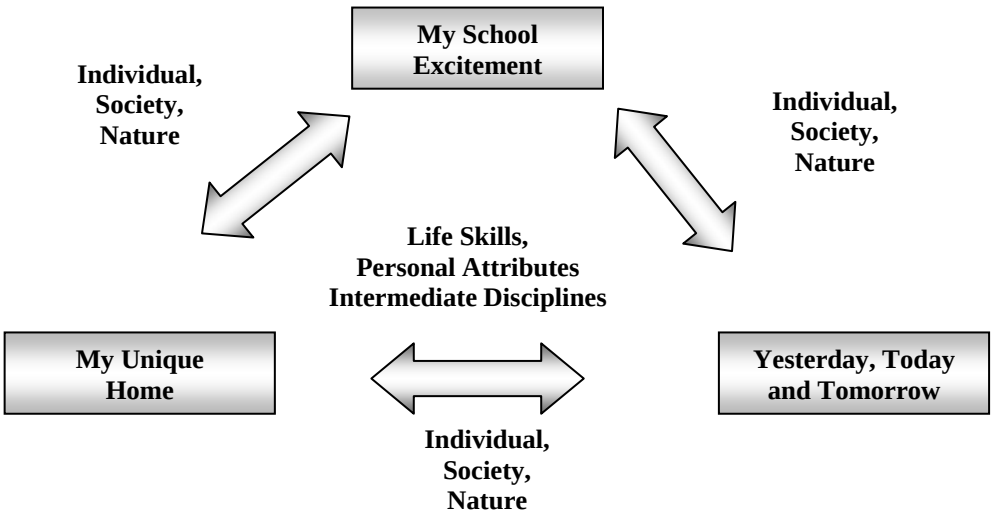


Figure 2.6. Themes in the Life Sciences Curriculum (adapted from MONE, 2005).

There are several reasons for using a thematic approach in Life Sciences Course. The purpose of selecting common themes is to increase the probability that teachers will find it appropriate and convenient to integrate the activities into the current curriculum; students will have fun, will be more actively involved, will develop learning skills more quickly as each one is connected to and reinforced by the other, will be more confident and better motivated and will present fewer disciplinary problems.

The thematic units take teacher initiative and creativity into consideration and support the adjustment of the curriculum to students' needs. Thematic approach is a great way of covering various topics related to the basic subject or unit. It is a source of motivation for students with individual differences and helps reflection of the students' self-confidence and confidence to their work on the other courses. It allows the students to understand and respect other's point of views (MONE, 2005; Özdemir & Yıldız, 2009).

Thematic approach is a means of instruction, whereby many parts of the curriculum are associated together and integrated within a theme. It allows learning to be more natural and less fragmented than the way where a school day is a time divided into different subject areas. It allows literacy to grow progressively, with vocabulary linked and with spelling and sentence writing being frequently reinforced.

Following factors need to be considered when deciding on themes. The themes should (1) be consistent with a variety of learning approaches; (2) be applicable to many fields; (3) be basis of the courses; (4) attract the students; (5) provoke students' curiosity and research requests; (6) be general enough to be integrated with other disciplines and limited enough to be accessible through education; (7) provide students with the opportunity to try new activities and gain skills; (8) encourage depth and width in learning; (9) provide students with opportunities to gain personal attributes; and (10) attempt to monitor children's natural way of learning (MONE, 2005). The following figure illustrates the themes, special skills, personal attributes, and intermediate disciplines in the Life Sciences Curriculum (Figure 2.4).

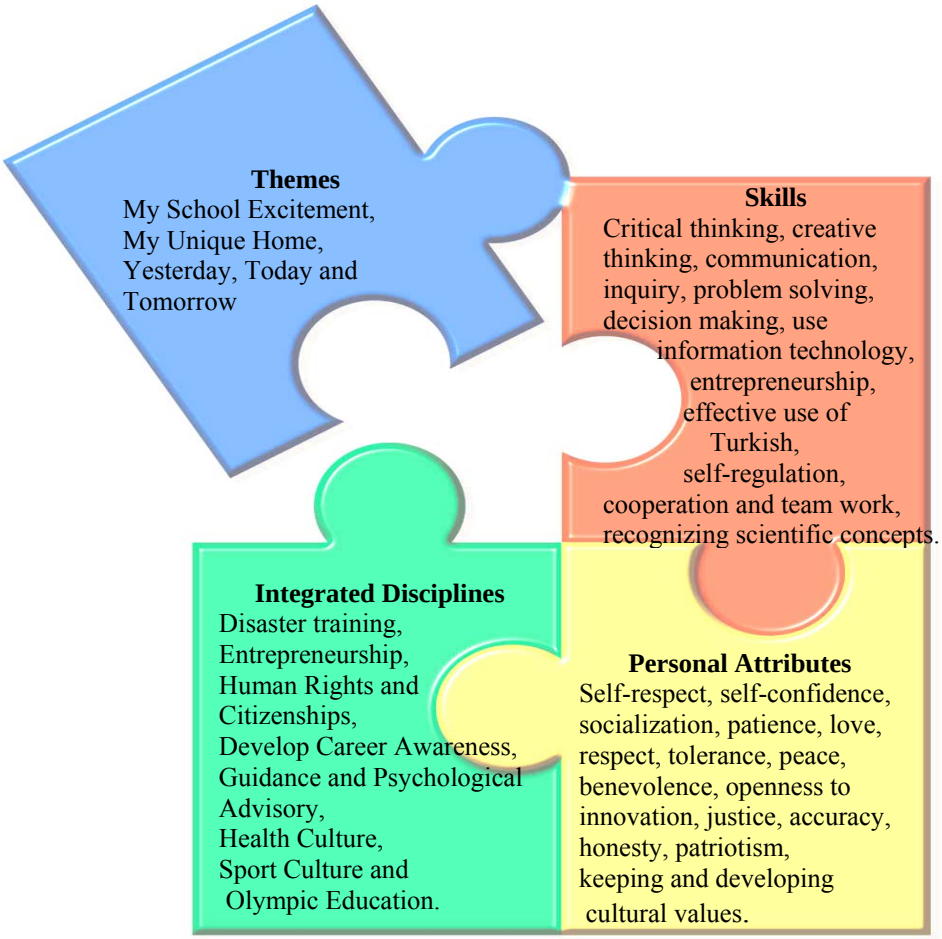


Figure 2.7. Themes, Skills, Personal Attributes, and Intermediate Disciplines in LSC (MONE, 2005, p.52).

2.11.4. LSC Acquisitions

The acquisitions and skills of LSC are used by students during the knowledge construction regarding objects, events and materials that students confront in real life. An acquisition refers to the process that experienced by the students during the each units of the lesson. The number of acquisitions and the time allocated for each theme are shown on Table 2.1.

Table 2.1. Distribution of the Acquisitions of LSC According to Grade Levels

	Theme Name										
	My School Excitement			***My Unique Home***			***Yesterday, Today, Tomorrow***			***Total***	
Grades	**Number of Acquisitions**	**Time allocated (hour)**	**(%)**	**Number of Acquisitions**	**Time allocated (hour)**	**(%)**	**Number of Acquisitions**	**Time allocated (hour)**	**(%)**	**Number of Acquisitions**	**Time allocated (hour)**
1st	39	63	37,7	30	58	34,7	16	46	27,5	85	167
2nd	34	64	36,2	37	68	38,4	24	45	25,4	95	177
3rd	34	59	33,5	46	67	38,1	33	50	28,4	113	176

2.11.4. LSC Specific Skills

The specific skills of the LSC were described in detail in the following lines (MONE, 2005, p.18):

Critical thinking refers to distinguishing what you already know and do not know, to determine straightness of you already know, to interrogate the causes of phenomena, to set up a relationship between events and phenomena, to distinguish differences between facts and opinions, and to express the logic between ideas and phenomena, to determine the value and appropriateness of behaviors.

Creative thinking refers to create new and original ideas, to find an extraordinary connection, to be open to intuitions, emotions and passions, to take risks, to show courage, and to challenge.

Research skills includes asking questions, making observations, estimating, collecting and recording the data, organizing the data, explaining the data, and presenting the findings of research.

Communication skills means to listen to and express feelings, to receive and give feedback, to use communication tools, to exhibit kind behaviors, to discuss, to be open minded, to persuade, to come together to realize a common aim.

Problem Solving skills includes being aware of problems, determining the problems belong to whom, asking appropriate questions in order to clarify problems, explaining and recognizing the problem, knowing the sources of related knowledge , considering possible results, and finding a most suitable way of solution.

Using knowledge technologies refers to being able to operate a computer, to save the data, to operate and to give a shape to and present the shaped knowledge, to prepare a report with multi-media equipments, to reach knowledge through television and radio, to use technological devices in accordance with their aim, to find knowledge, to plan the knowledge, to apply writing sources, and to use the available sources in the community.

Entrepreneurship refers to being aware of the common needs of community that have not been explored, taking risks, being open to new ideas, knowledge and skills, being open to criticism and failures, showing the courage of trying new things at the expense of success, and enjoying this experience.

Using Turkish in a effective, proper, and good way refers to using Turkish correctly, speaking and writing comprehensively, checking whether their own understanding is correct or not, listening effectively, writing legibly in Turkish, and using Turkish appropriately.

Decision-making skills include determining the subject to produce decision alternatives, considering the possible outcome of decision-making, describing the values, deciding on the most suitable one, putting the decision into practice, undertaking the responsibility of the decision made.

Using sources effectively includes using, planning and producing the sources available in the environment and developing an awareness of using environment, time, money and material.

Providing security and protection refers to obeying the rules of health and security, protection from natural disasters, enabling traffic security, the ability to say no, and health protection.

Self-control means to behave in accordance with ethic, to enjoy oneself, to learn how to learn, to determine a goal, to know oneself and to observe one's individual progress, to control emotions, to plan a career, to perceive time and place correctly, to cooperate in the participation and sharing and team working, to be a leader, to respect differences.

To recognize that every living thing around him or her is in a natural state of constant change and that every existence is continuously influencing each other in a way that would result in a causal change; to understand that even if they can be classified together because of their similar features, everything is different from the other; to realize that every living thing is in interaction with all the other living or nonliving things and with the environment; to recognize that life never really ends, and matters can change but never vanish completely.

To recognize the basic concepts of theme means to use the themes available in "My School Excitement" theme, "My Unique Home" theme, and in "Yesterday, Today and Tomorrow" theme properly in order to write a story related to concepts, to create a map of concepts, to draw a picture, and to make an animation, to interpret questions with regard to knowledge about concepts (MEB, 2005, p. 18-27).

2.12. Summary of the Literature Review

This literature review aimed to outline the nature of the curriculum change process and the main elements of educational reform in several countries; reveal an argument of which elements will help the schools adapt the innovations. Examples of major curriculum reforms discussed in this chapter highlight the vital changes rather than a comprehensive representation of all efforts.

Findings from those studies reviewed have generally shown that at present, many educators are holding the student-centered approaches as they produce and implement main curriculum reforms in their professional education programs (Boyd, 2000; Sani, 2000). In addition, active participation of the students is necessary for those reforms. In general, these studies emphasized that students construct knowledge by collecting and synthesizing information and integrating it with the general skills of inquiry, communication, critical thinking, and problem solving.

This review distinguished that the curriculum improvement efforts generally include changes in acquisitions, content and organization of the program, integration of innovative ways to work with learners, and utilizing authentic assessment methods.

With regard to the ability to think critically, previous research maintained that the curriculum restructuring focuses on getting students to practice in real-world matters or problems, frequently in groups. These problems are typically open-ended and have no single right answer.

Besides, relating to the teachers' role, researchers assert that curriculum reform studies emphasize that the teachers should become coaches or guides to facilitate learning rather than only monitoring it. It was seen that learning environments are designed to encourage the students work collaboratively in new curricula. Furthermore, new curricula seek the assessment methods that aim to encourage and analyze learning. That is, teachers view assessment as a way of encouraging the learners to produce intuitive questions and learning from their mistakes rather than searching for the sole right answer. Consequently, curriculum reform studies recommended that authentic assessment methods such as peer assessment, projects, and portfolios should be used.

The curriculum reorganizations emphasized the changes that are designed to improve students' interactions, problem-solving or critical thinking skills and the significance of group work and collaboration in realizing these aims.

The curriculum change requires many amendments and provisions both in the organizational patterns and in the instructional methods. The teachers can provide substantial information about the difficulties and discrepancies in the curriculum implementation since the responsibility to put these curriculum innovations into practice belongs to the teachers in the classroom. They experience the curriculum first hand, and administer a diverse array of activities to actualize the acquisitions of the curriculum. However, changing the classroom practices is not easy for the teachers.

A careful, professional and planned confrontation of teacher perceptions with declared goals of the reform can lead to a constructive bridging of the gap between the goals and the possibilities of their attainment. We need to realize, then, that no reform, innovation or change in which teachers merely carry out the changes as an instruction will likely yield the desired results (Kalin & Zuljan, 2007). Teachers' understandings of the principles of an innovation and their background training play a significant role in the degree of implementation of a curriculum innovation. Carless (1998) suggests that if teachers are implementing an innovation successfully, it is necessary that they recognize both the theoretical principles and classroom applications of the proposed change.

Thus, the teachers' perceptions about the implementation of current Life Science curriculum were investigated to reveal whether their pedagogy is pertinent to current reform issues. Investigation of teachers' degree of assurance towards Life Science education goals provides us with data for a better understanding of their real teaching behaviors.

CHAPTER III

METHOD

This chapter includes a brief description of the overall design, the participants, the data collection instruments, the data collection procedures and the data analysis procedures of the study. It also presents validity and reliability issues, ethics, limitations and assumptions of the study.

3.1. Overall Research Design

The purpose of the study is threefold: (1) to examine the implementation of current Life Sciences curriculum in a selected primary school from the perspectives of teachers, students and administrators; (2) to investigate the degree to which these perceptions were embedded in the classroom practices; to identify whether the implementation of the curriculum was conducive to principles of constructivist pedagogy.

In order to collect comprehensive data on the implementation of Life Sciences curriculum, the study was conducted in a particular school selected as a case. Case study was employed as a research design because the case study method was particularly well suited to gather detailed information about the participants' perceptions and was an ideal methodology when a holistic, in-depth investigation of individuals, groups, institutions or other social units is needed (Baxter & Jack, 2008; Feagin, Orum & Sjoperg, 1991; Yin, 2009). Case study research design provides a systematic way of looking at events, collecting data, analyzing information, and reporting the results. As a result of the study one may gain a sharpened understanding of why the instance happened as it did, and what might become important to look at more extensively in future research (Flyvbjerg, 2006).

In qualitative researches using flow charts help the researchers to narrow the research topic and to investigate it in depth (Silverman & Marvasti, 2008).

Qualitative researchers claim that considering research topic as a funnel enables them to get a visual understanding how narrow the topic must be. Like a funnel, the large end of the conceptual funnel includes the general questions, and tapers off into a narrow and concentrated scope (Benbow, 1994 cited in Marshall & Rossman, 1999, p.28; Riviera, 2009). Figure 3.1 illustrates the funnel metaphor, that is, at the beginning of the study direct experiences of the researcher stimulated the initial curiosity, and then this curiosity connected to the research questions. Midway down the funnel data collection methods and data analysis were focused. The thin end of the funnel focused more closely on results, discussions, conclusions and implications of the research. As can be seen from the figure 3.1 the design of the research was iterative that is, data collection and research questions were adjusted in line with what was learned (Mack, Woodsong, Macqueen, Guest, & Namey, 2005).

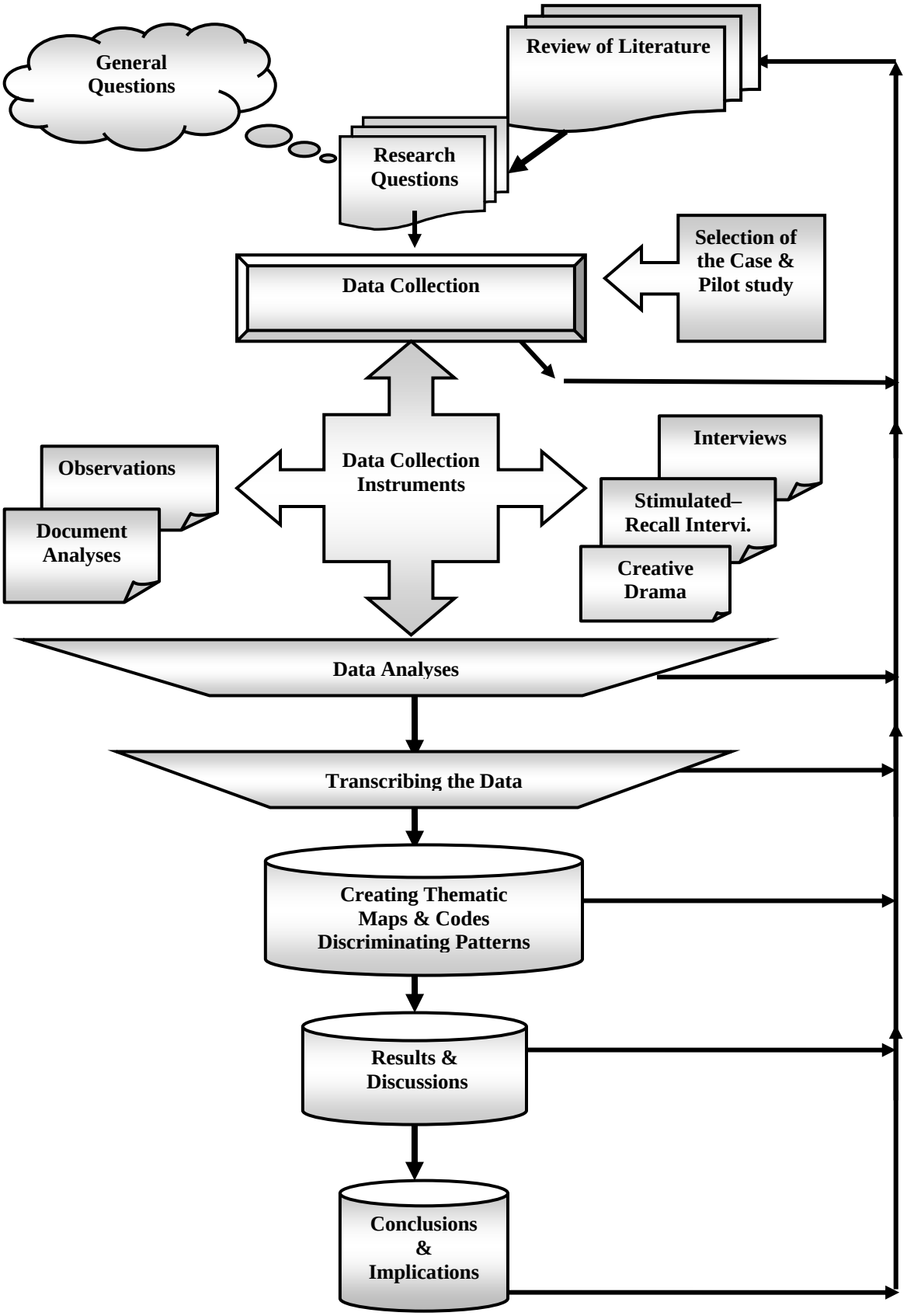


Figure 3.1. The Flowchart of the Design

The participants of the study were selected through purposive sampling. The participants were the school administrator and 2 co-administrators, 4 classroom teachers and 87 students from different 2nd and 3rd grades classrooms.

Qualitative data was collected through document analysis, observations in the Life Sciences classes, semi-structured interview with administrators, stimulated recall interview with teachers, and creative drama with students.

The collected data were transcribed, coded and analyzed by discriminating patterns and constantly comparing incidents to the codes to help establish clearly defined categories (Miles & Huberman, 1994; Bazeley, 2007).

3.2. Research Questions

The following questions guided the data collection and data analysis process in this case study:

1. What are the general characteristics of current Life Sciences curriculum?
2. What are the teachers', students' and administrators' perceptions of the implementation of current Life Sciences curriculum?
    - 2.1. What are the perceived roles of teachers, students and parents in the implementation of LSC?
    - 2.2 What are the main teaching methods and techniques used in Life Sciences lessons?
    - 2.3 What are the main teaching materials used in Life Sciences lessons?
    - 2.4. What are the main assessment techniques used in Life Sciences lessons?
3. Is the implementation of current Life Sciences curriculum conducive to the principles of constructivist pedagogy?

3.3. The Case

The site of this study was a K-8 primary school called Pleiades Primary School (PPS pseudonym) in which the researcher works as a classroom teacher. The

school is located in a district of Ankara which is close to the metropolitan Ankara. The school is located 13 km from the city center of the district. It was built in 1998 on an area of 7408 m². The school with 24 classrooms has started education in the academic year 1999-2000.

The school has a single four-storey building. The school's environment and garden walls are surrounded by railings. It has a security system. Some of the school walls are decorated with cartoons. A Turkish flag, flag poles and a bust of Atatürk were located in front of the school building. Student's playground is wide enough for students. The school has a White Flag which was given by The Ministry of Health and Ministry of Education in May 2009 as a result of audits. The schools which meet the certain criteria in terms of cleanliness and hygiene are awarded a White Flag and a certificate by the state.

The teaching staff of the school consists of 26 classroom teachers (Table 3.1) one of them have provisional duties), 30 branch teachers, 4 co-administrators and a school principal and 2 beadle (who does cleaning and runs errands in the school). There are 24 classrooms, 40 sections, 2 pre-school classrooms and 1791 (896 girls, 895 boys) students in the school. The school implements double-shift in the morning and the afternoon.

The school has a science laboratory, a technology design class, a library, a multi-purpose hall, Guidance and Psychological Counseling Service, a shelter, two dressing rooms, and a Parent Meeting Room, a canteen and an information technology classroom with 37 computers.

Table 3.1. *Distribution of Classroom Teachers in PPS*

	1st Grade	2nd Grade	3rd Grade	4th Grade	5th Grade	Total
Classroom teachers	5	5	5	5	5	25

The major subject areas are taught by classroom teachers—Turkish, Life Sciences, Mathematics, Social Studies, Science and Technology, Visual Art, Music, Drama, Physical Education grades from 1 to 5. The curriculum is prescribed by the Ministry of National Education (MONE), with a pre-selected list of recommended textbooks. Teachers choose the textbook they want to use from the list. These books are printed by the MONE and are distributed to students.

3.4. Sample Selection

Sampling and sample size considerations are central to qualitative research. Since this was an exploratory research, the population of this study was not pre-stated in strict terms, in case an important individual, variable, or unit of analysis is ignored. As the data collection methods are time consuming, data were collected from smaller numbers of people. In addition, the benefits of using small sample include richness of data and deeper insight into the phenomena under study. Since case study research is not sampling research (Yin, 1994, Stake, 1995; Feagin et al., 1990), the case selection was based on information-oriented sampling (Yin, 2009). That is, the willingness of the individuals to participate in the study and to provide the required information were considered when selecting the participants. This study focused on the implementation of LSC with a case—a public primary school. The school was chosen as an instrumental case to provide insight into the implementation of LSC (Creswell, 2008). The researcher has been working as a teacher in the selected school for two years. She is also familiar with the District Directorate of MONE which makes getting the permission easier. . After getting permission to conduct the study, the data were collected during the first semester of the 2009-2010 academic year.

With the purpose of covering a variety of viewpoints relevant perspectives from an appropriate array of data sources and for indicative generalizations to be richer, data were collected until data saturation (Flick, 1998; Morse, 1995), theoretical saturation (Strauss & Corbin, 1990), or informational redundancy (Lincoln & Guba, 1994) reached.

In order to get data saturation, theoretical saturation, or informational redundancy, sample size of this present research would not be too small. That is, data were collected when a quantity no longer responds to some external influence. Simultaneously, to employ a deep, case-oriented analysis the sample would not be too large (Sandelowski, 1995). There are several suggestions that have been made about the sufficient sample size. For example according to Creswell (2008), in a case study 3-5 participants are adequate.

There are no guidelines in determining sample size in creative drama session, so creative drama leaders do not normally know the number of participants in the sessions beforehand. The number of participants may change in size according to

the several factors such as age, gender, education level of the participants. In this study, with regard to the use of creative drama sessions 20-25 participants were considered as sufficient.

3.4.1. Participants

The participants of this study have some qualifications: they have experienced the phenomenon, the Life Sciences curriculum, they were able to keep in contact with the researcher and they were eager to express their opinions to the researcher.

The participants were the school administrator and 2 co-administrators, 4 classroom teachers and 87 volunteer students from 2nd and 3rd grades.

During the sampling process the characteristics of individual participants were not considered. The 1st grade teachers were excluded because they give priority to teaching literacy and LS lessons were not exactly put into practice. The administrators were selected according to willingness to participate and having knowledge about the curriculum.

Since the participation was voluntary, all 2nd and 3rd grade classroom teachers were asked to participate in the study. Only female classroom teachers were eager to cooperate. Thus, two 2nd grade and two 3rd grade classroom teachers participated in the study.

Each participant teachers and administrators were asked to respond the questions requesting demographic information such as age, the department of graduation, certification, work experience, and participation of in-service training. The background characteristics of the participant school administrators are shown on Table 3.2

Table 3.2. *School Administrators Background Information*

Administrator	***Gender***	***Age***	***Department of Graduation***	***Years of Exp. as a Teacher***	***Years of Exp. as an Admin.***	***In-service training (days)***
AI.1	Male	47	Classroom Teaching	6	19	5
AI.2	Male	42	Classroom Teaching	15	4	5
AI.3	Male	34	History Teaching	1	6	5

The average age of the administrator participants was 41. Two of them were graduated from Classroom Teaching and the one was from History Teaching. Two of the administrators were trained and have passed an exam to become school administrators. One of the administrators was working as an administrator with the consent of the governor. The administrators have at least four years of experience in management.

The background characteristics of the participant teachers are shown on Table 3.3

Table 3.3. *Teachers Background Information*

Grade	***Teacher***	***Gender***	***Age***	***Department of Graduation***	***Years of Exp.***	***In-service training (days)***
2	Ayşe*	Female	39	The Faculty of Communication	13	15
2	Filiz	Female	39	Classroom Teaching	19	5
3	Burcu	Female	32	Classroom Teaching	9	5
3	Şebnem	Female	31	Biology	6	-

(*The teachers were given pseudonyms)

The average age of the teacher participants was 35. Two of the teachers were graduated from Classroom Teaching and the remaining were from alternative certification programs.

There are two reasons for selecting the 2nd and 3rd grade students and their classroom teachers. First, the role of the classroom teachers in implementation of the instructional activities is critical. The elementary-classroom teachers of the 2nd and 3rd grades have been expected to put newly developed curriculum into practice since 2005-2006 academic year.

Since they were illiterate yet the 1st grade students was kept outside to this study. The 2nd and 3rd grade students were participated in the creative drama activities separately. The demographic characteristics of student participants are shown in Table 3.4. As can be seen in the table, more than half of the students were female (53%) and the remaining were male (47%). Besides, 52 percent of the students were 2nd graders and 48 percent were 3rd graders.

Table 3.4. *Students' Demographic Characteristics*

Grade Level	***Female***	***%***	***Male***	***%***	***Total***	***%***
2nd Grade	24	27.6	21	24.1	45	51.7
3rd Grade	22	25.3	20	23.0	42	48.3
Total	46	52.9	41	47.1	87	100.0

Students were also asked some questions related to computer facilities at their homes. The findings indicated that 66 percent of the students have a computer and only 41 percent of them have internet connection in their house.

3.5. Data Collection Methods and Procedures

Document analysis, semi-structured interviews with the administrators, observation of lessons, stimulated recall interviews with the teachers and creative drama sessions with the students were employed to collect data in this study.

3.5.1 Document analysis

In order to determine the general characteristics of LSC, the documents including reports of the teacher committee meetings, worksheets, teaching schedules, and lesson plans (stated in the teacher guidebooks) were analyzed.

3.5.2. Observations

The LS classes of each selected teacher were observed to collect information about the implementation of curriculum.

Observing the classroom was more reliable, because it was possible to see which activities actually used, how the teachers and students actually behave in the classroom. Observations provided precious background information about the school where the study was undertaken.

In order to probe teacher-student interactions, two lessons for each teacher were recorded on video. Thus, eight observations were conducted in two 2nd and two 3rd grade classes of the Pleiades Primary School, both morning and afternoon classes. Regular situation of teaching were observed to avoid additional influences. The recording was conducted by the researcher over a period of three months. The researcher was placed in the corner of the room and focused the camera on the teacher and the students who interacted with the teacher.

The observation process consisted of four stages: recording the lessons; transcribing the raw data; coding the recorded material according to the categories and analyzing the coded speech acts (i.e., frequency, speech direction, and initiation).

The observations were accomplished by means of observation checklist consisted of several items regarding the elements of constructivist teaching. Some items from the observation checklist are: “students primarily work in groups”, “students play a larger role in judging their own progress”, “the teacher gives enough time for students’ response”, “learning environments link newly learned subjects to other domains”, “the teacher asks open ended questions for comprehension”, “students are actively trying to construct meaning”, “curriculum is presented whole to part with emphasis on the big concept” and so on (See Appendix C). The items of this checklist were adapted from Brooks and Brooks (1993). The

researcher specifically observed the classroom climate, teacher-student and student-student interactions, instructional methods and materials utilized in the lesson. The researcher concentrated on the teacher's and students classroom behaviors. The observation schedules included basic information such as date of observation; start and end times; physical appearance; the classroom; and the pictures of the classroom.

After the lessons, the records were watched and some notes were taken about what was observed and stimulated recall interview questions were determined. All the collected data were periodically reviewed and the themes were discussed with the other coders.

3.5.3 Stimulated Recall Interviews

After the each classroom observation, stimulated recall interviews were conducted with four participant teachers. The teachers were asked to make reasonable reports of their ideas based by providing the extensive retrieval cues on videotapes recorded in their classrooms. To obtain stimulus material for the stimulated recall interviews, two lessons with each participant teacher were videotaped with the camera being arranged to capture the teacher's perspective as far as possible. The teachers were asked to watch the videotape of the lesson and think aloud regarding thoughts which occurred during that lesson. Participants were free to interrupt the tape at any time to make more detailed comments. All comments made by the teacher and the researcher during these interviews were recorded on audiotape and then transcribed.

The stimulated recall interviews serve multiple purposes: member checking for accuracy and clarification of classroom observation data; probing deeper into participants' opinions in the current goals of LSC and their classroom practice; to explaining the assessment tasks; and analyzing the previously established categories for definition and research questions development.

3.5.4 Semi-Structured Interviews

Semi-structured interviews were conducted with the administrators to explore the administrators' perceptions about the general characteristics of LSC, the implementation of LSC in their school including how teachers implement the curriculum, the students' reaction to the implementation, and the problems that teachers have in implementing the curriculum.

The interviews involve a series of open-ended questions based on the topic areas that the study aims to cover. In order to prevent answering difficulties or brief responses, prompts were used to encourage the participants to consider the question further. Each Interview lasted about 20 to 35 minutes. All of the interviews were tape-recorded though getting permission from the participants. Tape recording was to ensure that the whole interview was captured and provided complete data for analysis so cues that were missed the first time were recognized when listening to the recording.

3.5.5. Creative Drama Sessions

As the fifth data collection technique, creative drama sessions were conducted with the students to examine their perceptions of 2^{nd} and 3^{rd} grade students about the Life Sciences classes according to some variables such as teacher's, students' and parents role; materials used during the lesson, assessment methods used by the teacher.

Drama as a discipline could be classified into two parts: drama in arts education and drama as a teaching method. In this study, creative drama was used as a qualitative data collection method. Creative drama involves three phases: These are warm-Up animation and evaluation (See Figure 3.2).

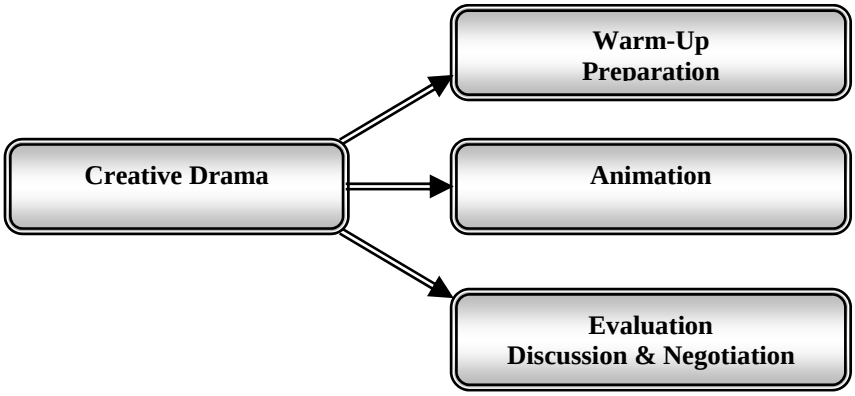


Figure 3. 2. The Phases of Creative Drama

A variety of techniques such as unfinished materials (e.g. story, poem), still images, improvisation, moment of truth, letters, rituals, ceremonies, role cards, hot sitting, interview, pantomime, brainstorming, drawing, role-playing, holding a meeting can be used in these phases.

Over the last few decades, the arts, including drama, have become meaningful methods of inquiry in qualitative research (Barone and Eisner, 1997, 2006). Ethno-drama has been identified as an effective and innovative qualitative research method and dissemination instrument which aims to develop and notify society through dramatic performances. Although it is quite new and unfamiliar, researchers are increasingly using ethno-drama in their studies. However, there is so little research into the use creative drama as a means of data collection.

Creative drama offers each student an opportunity to share ideas by permitting them to play freely in a setting of security and acceptance. When participate in creative drama activities the students feel comfortable and express themselves freely.

The creative drama sessions were conducted in the multi-purpose room with a wooden-floor. The room has no furniture so it was easy to organize the room in a way that students have enough space for moving comfortably and freely. Before the beginning of the warm-up activities the room was marked by using chairs and the boundaries of the room were determined to control students' actions.

A series of creative drama sessions were conducted in the school setting, in two months period. A total of 87 students (45 second grades, 42 third grades)

participated in 4 creative drama sessions intended to identify students' perceptions of the Life Sciences classes.

There is no agreement on how many participants would be ideal for drama sessions. The participant number depends on several factors such as the age, education level, socio economic status, and the topic of the session. Therefore, with the intention of making certain participants' sincerity, volunteer students were participated in creative drama activities, in groups of 20-25 individuals, under the guidance of the researcher as a leader.

During the drama sessions the students were expected to act, imagine, and reflect on individual experiences, real or imagined (Pinciotti, 1993). To provide adequate breadth and depth of information, this study was not rely on the views of only one group; several creative drama sessions were run with different group of students. Participants in the drama joined the activities intellectually, emotionally, physically, verbally and socially.

The Process of the Creative Drama Activities

To ensure appropriateness of the drama activities, they were pre-planned, and the plans were revised by experienced drama leaders (See Appendix D). The activities presented below have been developed by the researcher to allow students to express their opinions about Life Sciences Course by making use of drama techniques. The aim of these activities to find answers to the questions such as: How the teachers/students act in Life Sciences lessons? Why do they act as they do? Which activities are important? What kind of materials do they use in the lessons? How their parents participate in their Life Sciences Course?

The understanding of the teaching activities, assessment techniques and materials of LSC involved the application of brainstorming, still image, and drawing exercises. In order to identify the roles of the teachers, students and parent, role-playing and discussions were utilized.

Step 1-Introduction: First, the students were asked to stand in the circle position, and they were expressed the aim of the session by the researcher.

Step 2- Dance and Write: Then, they were asked to dance and write “Life”, “Science” and “Life Sciences” on the walls, ceiling, floor, air with the different parts of their body (e.g. fingertips, toes, ears, noses, hips, knees, shoulders) as a relaxation exercise.

Step 3- Still Image: After that, the still images were used to reveal the mainly used instruction materials. The students formed two- or three-person groups and were asked to make a still image. They stand like a statue of the materials which they deemed regularly used in LSC.

Step 4- Brainstorming: The students were asked to stand in the circle position and to spell the words about the meaning of Life Sciences in their mind.

Step 5- Drawing: The students formed 3 groups and were asked to make a group poster about the mainly used instruction materials. Each participant allowed drawing the images of the materials that were mostly used in LSC.

Step 6-Filling the Hearth and Dustbin**:** Subsequently, the students filled hearth and dustbin sheets on their reactions about the “likes” and “dislikes” when studying LSC.

Step 7- Midterm Evaluation: Then, the students had a formative meeting of assessment to verify their opinions. They were asked to read from the reaction sheets what the best and the worst features of the LSC were.

Step 8- Writing in Role: After the evaluation session the students divided into three groups (two groups of eight students and one of nine students). Participants were asked to write a report their opinions about the roles of the stakeholders. Each student detailed their own opinions about the roles of teachers, students, and parents which were focused on LSC, with the guidance of the researcher.

Step 9- Midterm Evaluation: They were asked to read from the report sheets what their opinions about the roles of the stakeholders were.

Step 10- Animation/ Role playing: Next, the students split into two groups and were asked to animate the process of a typical LSC. They animate a classroom that reminds their own classroom and the teacher.

Step 11- Writing in Role: The students were asked to write a letter to their foreigner friends "Tom" who wants to come Turkey, and wanders about the implementation of the LSC. The students were expected to describe the roles of the stakeholders, the materials, teaching methods and evaluation methods utilized in the lesson, and classroom climate.

Step 12- Evaluation: The final evaluation of the drawings, letters and hearth and dustbin sheets took place during the meeting.

The creative drama sessions were recorded, transcribed, coded and cross–checked against the results of the classroom observations. These creative drama sessions offered ample information about the implementation of the lesson. The sessions also revealed the exact and sincere thoughts of the student.

3.6. Data Analysis

Analysis of data consisted of summarizing the mass of data collected and presenting the results in a way that communicates the most important features. The data collected were analyzed through qualitative techniques. That is, data was used to describe the phenomenon which was implementation process of the Life Sciences Curriculum in a selected school.

The analysis of this qualitative study was not constrained to a definitely distinguished data set. The researcher kept a detailed field diary and made notes of all negotiations and thus generated an amount of data set to which she limited her analysis. Besides, throughout the analysis processes she remembered significant details which she has not recorded in her notes, but has to consider in the analysis. The researcher explained this logical process in a sincere and persuasive manner.

The interviews were tape-recorded, transcribed. Data were analyzed using coding procedure and data from different sources were triangulated to establish trustworthiness.

Observations, stimulated recall interviews, creative drama sessions were also transcribed, coded and analyzed by discriminating patterns and constantly comparing incidents to the codes to help establish clearly defined categories. During the data analysis three procedures were used that were suggested by Miles and Huberman (1994):

First of all, the mass of qualitative data collected were reduced and organized, out through data coding, categorizing, and subcategorizing; thematic synthesis; writing summaries, discarding irrelevant data and structuring of relationships. Second, in order to demonstrate the data several graphical layouts were utilized such as figures and tables. Third, the conclusions regarding to the study were developed. Then, these preliminary conclusions were verified, that is the validity was examined through reference to the existing field notes or further data collection. The data analysis process was described below in detail:

3.6.1. Transcribing the data

In order to become familiar with the key messages emerging from data, the tape recordings of each interview was transcribed, and compiled. To get high-quality transcripts, tone and intonation were considered as indicators of feelings and meanings. When transcribing, in order to express those feelings and meanings some signs, punctuation marks, and techniques such as symbols (e.g. smiley face, star), upper case lettering, writing colored pencil, underlining and making bold were used. In order to add codes, comments, individual notes, and signs, the right margin of the transcript layouts widened. Besides, the transcripts were written as detailed as that the reader can comprehend how the data has been coded, how codes have turn to themes, and how themes have been included in the interpretative explanations. Thus, the quotes from the data set were including some information such as transcript name/number and page number in parentheses (e.g. SRI. Ayşe, p.3). The transcripts of interviews, stimulated recall interviews, and observations, were named in line with the first letters of the data collection method and the participants' pseudonym as was shown in the Table 3.5.

Table 3.5. *Classification of Quotes*

Abbreviation	Definition	Example
AI	Administrator Interview	AI.1, AI.2, AI.3*
O	Observation	O1.Ayşe, O2.Ayşe, O1.Burcu, O2. Burcu, O1. Filiz, O2. Filiz, O1. Şebnem, and O2. Şebnem.
SRI	Stimulated Recall Interview	SRI. Ayşe, SRI. Burcu, SRI. Filiz, SRI. Şebnem.
LET	The product of a creative drama activity in which students wrote letters to an imaginary friend.	LET.3B, 1, (3rd Grade-Burcu's Class, 1st letter), LET.3Ş, 4 (3rd Grade-Şebnem's class, 4th letter) and so on.
PIC	Picture	PIC.2A, 1 (2nd Grade, Ayşe's Class, 1st picture), PIC.2F, 9 (2nd Grade, Filiz's Class, 9th picture) and so on.
DOC	Written documents such as popular and unpopular aspects of LSC, roles of teachers, parents and students.	DOC.3B, 7 (3rd Grade-Burcu's Class, 7th document), DOC.2F, 4. (2nd Grade, Filiz's Class, 4th document) and so on.

* (The administrators were not given a pseudonym, they were called with numbers).

The drawings, pictures, written documents obtained from Creative Drama Sessions were named in line with the first letters of the activity, with the grade level and number of the document.

3.6.2. Coding the Data

Coding the data consists of a number of encoding steps: First of all, all the transcripts were carefully read several times by three coders who were PhD students from the departments of educational sciences with experience in qualitative research. Then, every item of information relating to the research question were identified, and each were assigned a code, or category in order to disclose repeated words or phrases of the participants, differences and similarities found within and across the individual texts (Thomas, 2006). The method of identifying and coding items of data allow the researcher to compare the data obtained from an interview with the data collected from other participants.

The coding procedure was the same with all the qualitative collected through semi-structured interviews, stimulated recall interviews, creative drama, and observation.

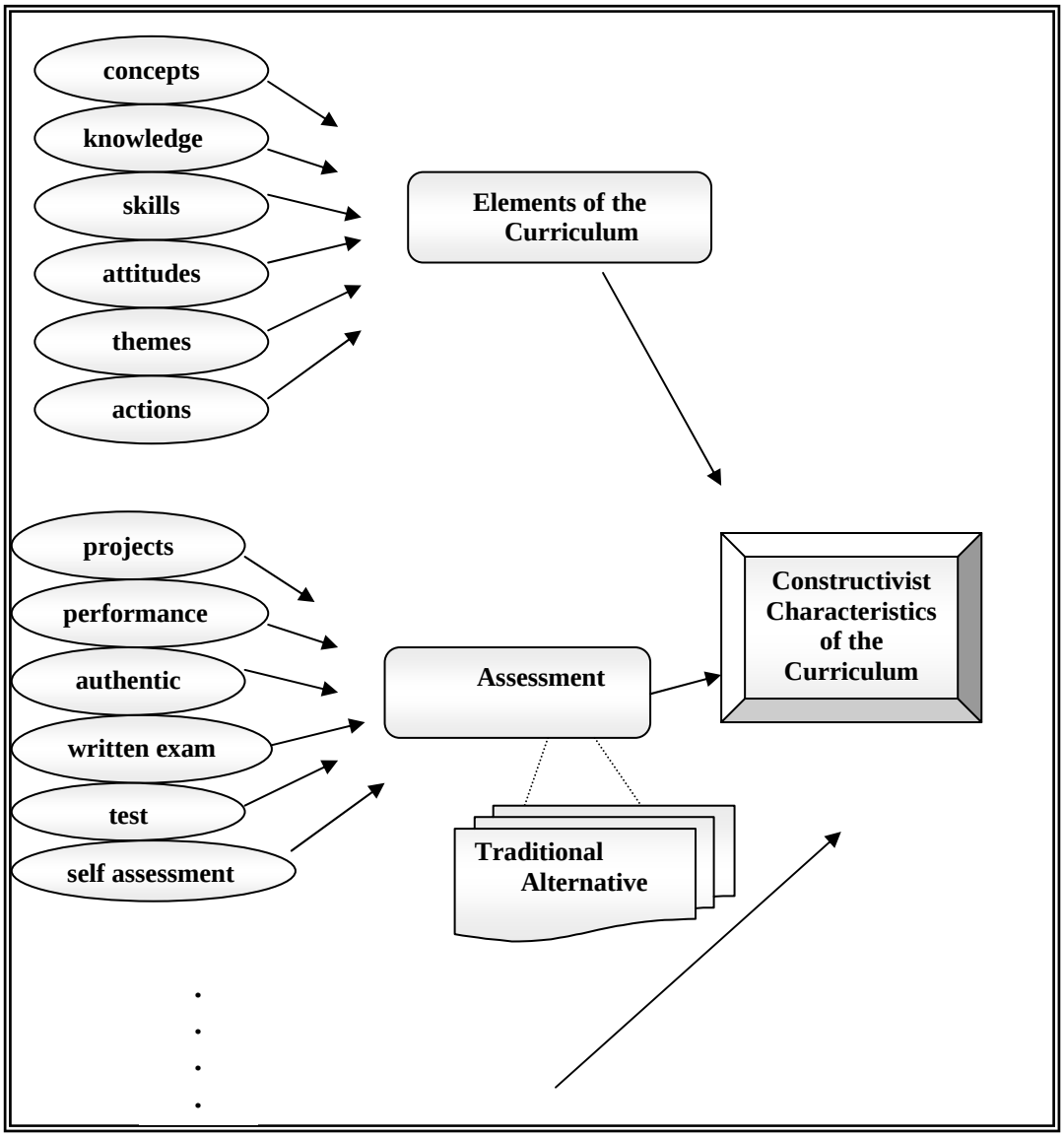


Figure 3.3. An Example of a Streamlined Codes-to-Theory Model of the Study (Adopted from Saldana, 2009).

The coders kept clean copies of transcripts in case they could change their minds later about an item of data and would want to move it to a different category. Finally, the process of content analysis involved repeatedly revisiting the data and reviewing the categorization of data until there were no doubt that the themes and categories used to summarize and describe the findings were exactly indicate the data.

3.6.3. Presentation of the Results

Results were supported by details from the data. At the outset, the emerged themes and categories were reviewed and they were used to organize the results section of the study. After that, this structure was explained as a list (see Appendix E). The themes were presented in sections with the categories as sub sections.

In this way, the categories of data were used to construct a case that the themes were the main findings of the study. Further evidence to support the findings was provided by using direct quotations from respondents. Since quotations are good examples of what teachers, students and administrators have said specifically about the category being described, key quotations were selected to illustrate the meaning of the data.

Examples of the emerged themes derived from the coded data were presented in Table 3.6.

Table 3.6. *Examples of the Codes and Categories Emerged from the Coded Data in Line with the Participant Groups*

Constructivist Classroom Characteristics of LSC		
Administrators (A)	Teachers (T)	Students (S)
Curriculum approach • learner-centered • active students • parent involvement Aims to develop • critical thinking, • cooperation, • communication • inquiry skills Teaching Strategies • Inquiry based • Lecture • Discussion • question-answer	Teaching Strategies • direct instruction • lecture • question-answer • cooperative learning o group work o identification of appropriate groups o task distribution • drama / role play • whole class teaching Teaching Materials • Whiteboard • Textbook	Teaching Strategies • lecture • question-answer • group work • drama / role play Teaching Materials • Whiteboard • Pen/pencil • Textbook • Notebook • Scissors • Glue • CD/VCD

Table 3.6 continued

Administrators (A)	Teachers (T)	Students (S)
Teaching Strategies • group work Teaching materials • projection • computer • textbook • internet Attitudes • Pleasure	Teaching Materials • Encyclopedia • Toys • Newspapers Assessment Traditional • written exam • multiple choice test Alternative • performance • exhibition / dissemination of students work • Projects • Presentation (oral/written) • self-assessment • group assessment	• Computer o Internet o PPT o Projection Assessment • written exam • performance • Projects • Presentation (oral/written) • self-assessment

3.7. Ensuring the Trustworthiness of the Data Analysis

Since there were no statistical tests to deal with the validity and reliability of qualitative studies, the findings and interpretation based on observations, stimulated recall reviews, document analysis and semi-structured interviews, and the conclusions posed by the research report were crucial. The best way to make it requires firmly understanding of the research approach, and skills for the use of qualitative data collection and analysis techniques.

In this present study, in order to ensure the trustworthiness, the researcher put aside her preconceived notions about the implementation of LSC and returned to the participants to make certain whether the interpretations were correctly reflected their experience.

According to Lincoln and Guba (1985) and Krefting (1991) credibility, transferability, dependability, and conformability are the elements of trustworthiness. Similarly, Holloway and Wheeler (2009) suggested the following ways to ensure trustworthiness of include: member validation, searching for negative cases and alternative explanations, triangulation, multiple coding, the audit trail and reflexivity.

The present study was utilized a number of techniques to help establish trustworthiness and are outlined below.

3.7.1. Credibility (Internal Validity)

This study was utilized several techniques to improve the probability that the findings and interpretations were credible: prolonged engagement, triangulation, and member checking.

Prolonged Engagement

In terms of data collection relative to prolonged engagement, data were collected until redundancy of data was achieved and teachers' behaviors were being repeated. The researcher spent sufficient time in the field to make her presence less obtrusive. That is, the classrooms were observed several times. It helped the researcher to build trust and understand the climate, social setting, and the interactions.

Triangulation

Triangulation refers to the use of more than one method of data collection and can involve triangulation of data, investigators and theories (Holloway and Wheeler, 2002). Combining the analysis with findings from different data sources is useful as a means to demonstrate trustworthiness in the analysis.

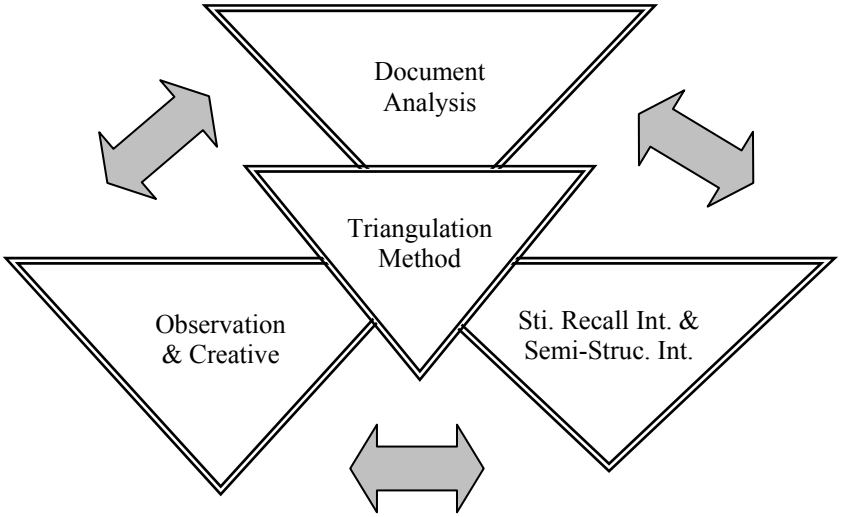


Figure 3.4. Triangulation of the Data.

To increase the probability that findings and interpretations were credible several data collection methods were employed in this study with such as classroom observations, collections of written assessments used by the teachers for the students, semi-structured interviews, and drawings, writings and animations obtained by creative drama sessions. These methods help the researcher to better understand the teachers' classroom practice and the opinions of the participants

Member Checking

Member checking, also known as member validation, informant feedback or respondent validation is a technique utilized by researchers to help improve the accuracy, credibility, validity, and transferability of a qualitative study (Yanow & Schwartz-Shea, 2006).

In the member checking process the transcripts of the data were printed and the participants were asked to read and specify whether the transcripts reflect their meaning or not. Then, the summary of data analysis and a portion of interpretation of their statements were given members of the participants in order to check the authenticity of the work. The participants were asked to critically comment on the adequacy of the findings. Their comments serve as a check on the viability of the interpretation.

3.7.2. Transferability (External Validity)

Transferability is also known as applicability, external validity, or fittingness of a study. It refers to the degree to which the results of qualitative research can be generalized or transferred to other contexts or settings. In order to increase transferability of this study, the research context and the assumptions that were central to the research were described carefully. This study includes detailed demographic and situational descriptions.

3.7.3. Dependability (Internal Reliability)

The meeting of the dependability criterion is difficult in this study, since the changing nature of the phenomena investigated by the research. That is, in quantitative approach, reliability refers that it the study repeated, in the same context, with the same methods and with the same participants, similar results would be obtained.

In qualitative studies dependability refers to the assessment of the quality of the integrated processes of data collection, data analysis, and theory generation (Lincoln & Guba, 1985). In order to address the dependability issue, the processes within the study were reported in detail, so as to facilitate a future researcher to replicate the work, if not necessarily to obtain the same results. Besides, the research methods and data analysis were controlled by the researcher's advisor and two competent peers.

3.7.4. Conformability (External Reliability)

Confirmability is a measure of how well the inquiry's findings are supported by the data collected (Lincoln & Guba, 1985). In this study a number of strategies were used to ensure confirmability. The study provided detailed information, in order to allow reader to use the information and determine whether the findings were applicable to the new situation. That is, during the study, the procedures were reported for checking and rechecking the data. Besides, not only cases that support the researcher's ideas or explanations, but to also negative instances that contradict prior observations were focused.

In addition to the above, a multiple coding method and a pilot study for creative drama were conducted. Multiple coding involves independent researchers cross-checking coding, and aims to reduce subjectivity in processing the data analysis. Thus, the data were coded by three different people at different times, and these codes were compared to reach consensus on the codes.

Although pilot studies do not used in qualitative research (Holloway & Wheeler, 2002), in the present study, a creative drama session was conducted as a pre-exercise, to get used to the type of data collection by the researcher. The pilot study helped to identify potential problems and errors that may arise during data collection and allow correcting them.

The pilot study was conducted with 25 second grade students. The students collected and studied about the Life Sciences Lesson in order to decide which creative drama techniques were used with this age group. The most popular and efficient exercises and techniques were: role playing/animation, relaxation exercises, still image, collaboration exercises, drawing exercises, and brainstorming games. Taking into consideration the results of the pilot study, some exercises which planned to conduct were skipped, and drawing sessions were added by the researcher. Since the researcher was the main data collection instrument, the pilot study increased the researcher's experience of leading a creative drama session. Besides, the researcher became familiar with the qualitative data collection methods and analysis.

3.8. Ethical Issues

Ethical issues in the qualitative researches are closely related to data collection methods that usually include long-term and close personal relationships, participant observation and interviews. This study addressed the following areas of ethical concern: protection of participants from harm (physical and psychological), prevention of deception, protection of privacy and informed consent.

3.8.1. Informed consent

In order to obtain informed consent from the participants, they were informed about the overall purpose of the research and its main features, as well as of the risks and benefits of participation. Consent was given both written format and verbally (See Appendix L). Since the researcher did not know in advance the stimulated interview questions and the questions that a participant might be asked, this was made clear to the participant at the beginning.

3.8.2. Responsibility to the participants

The researcher's responsibility to the participants includes issues such as ensuring confidentiality, avoidance of harm, reciprocity and feedback of results.

In ensuring confidentiality the private data that identifies participants were not reported. Moreover, the names of the participants were not recorded and they were given pseudonym in writing the transcripts. The participants were provided an information sheet that asked for verbal rather than signed consent.

The risk of harm to a participant was minimized by using all appropriate measures under the circumstances and is reasonable with respect to anticipated benefits. All participants have been informed about any benefit to be derived from participation in the research; all participants have been informed about the steps that are undertaken to protect their privacy and confidentiality.

There were reciprocity in what participants give and what they receive from participation in a research project. Reciprocity involved giving time to assist, providing informal feedback, and offering suggestions.

Moreover, participant teachers and administrators were given feedback on research results, as a way of recognition and appreciation to participants for their participation.

Furthermore, ethical approval has obtained from the university's ethics committee for collecting data from the primary school (Appendix P).

3.9. Limitations of the Study

The present study has certain limitations that need to be taken into consideration in evaluating the study and its contributions. The selection of the single case study design naturally produces many limitations as far as the generalization of the results of the study is concerned. Since the extent of this research was limited the data collected from the single case, the issue of generalizability emerges greater extent in this research. By understanding something about this particular case more in depth, can help to learn something about more general phenomena.

Another limitation of this study is the perspective adopted. Instead of trying to understand the implementation process in general, this study has been limited to the opinions administrators, teachers, and students. The opinions of parents and other education stakeholders were excluded.

The participants were limited to the teachers, students and administrators in a public elementary school in the 2009-2010 academic year. Although Life Sciences Course is taught in the 1st, 2nd and 3rd grades, first graders were excluded from the study.

To participate in this research is based on volunteering the participants were three school administrators, four female teachers, and 87 students were included in the study. Therefore, the results of this case study are limited to data collected from the participant stakeholders of the school.

Moreover, the results of the current study were derived from the qualitative data collected from participants through interviews, observations and creative drama sessions. It was assumed that all of the participants were sincere and truthful in their responses.

Furthermore, since creative drama sessions were used as a means of data collection instrument for the first time, there are no studies that directly supporting the appropriateness of this method. Similarly, there is hardly any supporting research in Turkey that used the stimulated recall interview method. Some of these limitations can be seen as efficient ways for future research under the similar topic of investigation. The most important contribution for future research obviously lies in the explanation of the utilization of the stimulated recall interview and the creative drama sessions as a qualitative data collection method.

CHAPTER IV

RESULTS

This chapter presents the results of the study. The purpose of this study is to examine the teachers', the students', and administrators' perceptions in relation to the implementation of current Life Sciences Curriculum and to examine the degree to which these perceptions were embedded in classroom practice. In the study it was also aimed to explore the extent to which constructivist classroom characteristics are observed in Life Sciences classes.

The data were collected through document analyses, semi-structured interviews, stimulated recall interviews, observations and creative drama sessions. The sets of documents including life sciences teacher guidebooks, minutes and decisions of class meetings, assessment forms, students' life sciences textbooks and workbooks, and the 2005 Life Sciences Curriculum itself were content analyzed to identify the emerging themes or major ideas. Content analysis is an unobtrusive and quick method for analyzing great amounts of transcript.

The findings of the research carried out in the Pleiades Primary School (PPS) were presented in line with the research questions. Findings from this study are clustered around primary themes under the main category of general characteristics of the LSC; the implementation of life sciences curriculum; teachers and administrators as implementation elements; the perceived teachers', students' and parents' roles in curriculum implementation; teaching methods used in life sciences course; the instructional materials used in life sciences course; the assessment techniques used in life sciences course; and the consistency between the implementation of current life sciences curriculum and the specific recommendations offered by constructivism. Each theme was further described by descriptive elements for added meaning. Each subsection below summarizes those major findings, and then provides quotes from administrators, teachers and students, which

ensure that the findings were comprehensive and deep. Finally the overall findings were summarized.

4.1. The General Characteristics of the Current Life Sciences Curriculum

In order to describe the overall characteristics of the current Life Sciences curriculum (LSC) the documents related to the Life Sciences Lesson—such as teacher's guidebook, students' life sciences textbooks and workbooks, the minutes of the meetings, exam papers, assessment scales and the 1st, 2nd and 3rd Grades Life Sciences Course Teaching Curriculum and Guide were examined by the researcher. In addition, administrators' and teachers' opinions about the general properties of the current life sciences curriculum were investigated.

4.1.1. The Content of Life Sciences Curriculum

The results of document analyses showed that the Life Sciences Curriculum has been designed to provide students with the basic information they will need to succeed in real life, as it was explained in detail in Chapter II. The LS course aims to prepare students for life and to teach them some basic knowledge related to the natural and social sciences in a single course. Science, citizenship, environmental and natural sciences, and geography disciplines are combined in this course according to the Gestalt approach or holistic approach. In other words, the approach of curriculum embraces an individual's whole life experiences including biological, psychological, social and cultural aspects. (MONE, 2005, p.12).

The LSC considers each student as different from each other and as perceiving the world in unique ways.

> The LSC aims to help the students have scientific thinking skills; learn how to reach the information instead of memorization; utilize, generate and share the knowledge; have well communication skills; use technology efficiently; have the humanity's common values; become creative and productive; capable of doing group work; know how to do research; have meta-cognitive skills; and become lifelong learners. (MEB & OECD, 2005, p.248).

The content of this course is derived from the children's environment that is directly perceived by the senses and emotions of them. Therefore, the students should be provided with opportunities to observe their environment and use their experiences while they are learning. In this way, students can choose the relevant events according to their age and abilities.

The contents of the life sciences textbooks were designed in a way that teaching follows the principles 'from easy to difficult, "from close to far", "from meaningful to meaningless", "from similarity to differences", and "from abstract to concrete". It was noticed that the relationship among Turkish, Mathematics, Art and Physical Education had been taken into consideration during the implementation of the LSC content. One of the teachers, Burcu, mentioned that LSC was an interdisciplinary course:

> "…for example in Life Sciences lesson, when I employ group working to prepare journal, the child also learns Turkish; because I want the students to pay attention to spelling and punctuation when writing. They draw too. They cut and paste pictures. That is, a child can do many things at once…" (SRI. Burcu, p.9).

Most of the topics of Life Sciences course were allocated to be taught in two academic hours; one is for introducing the issue and the second one is for comprehension.

4.1.2. The Acquisitions of the Life Sciences Curriculum

The results of the document analyses revealed that the LSC includes 85 acquisitions in the 1st Grade, 95 acquisitions in the 2nd Grade, and 113 acquisitions in the 3rd Grade. It was seen that generally three hours were allocated for each acquisitions in the 1st Grade; generally two hours were allocated for each acquisitions in the 2nd Grade; and generally one hour was allocated for each acquisitions in the 3rd Grade. The results of the analyses indicated that most of the acquisitions of the current LSC were not stated in line with the constructivist approach. Another remarkable issue was that for each acquisition an activity was

suggested. Besides, some acquisition statements include more than one acquisition. The following quotes illustrate some of the double-acquisitions of the LS lesson:

> Recognize the damage of natural disasters by using visual, auditory, and audio-visual communication tools. (MONE, 2005, p.146).

The results of the document analyses also showed that most of the acquisitions were stated at the lowest level (knowledge level) of the Bloom's taxonomy. The highest level that the acquisitions of LSC stated was the analysis level. That is to say, the acquisitions require the students to recall or recognize the facts. However, including higher order thinking skills in learning outcomes is one of the characteristics of a constructivist curriculum. Although, critical thinking, analysis and problem solving are higher order skills that the LSC aims to develop, there were not many objectives that require classification or evaluation. Most of the objectives were written with verbs that represent low-level of intellectual activity such as define and recognize (knowledge level); classify, identify and indicate (comprehension level); demonstrate, employ, illustrate, interpret, practice, sketch, use (application level). However, there were a few objectives written with words that represent analyses level of taxonomy such as differentiate and distinguish. The following are some of the specific acquisitions of the LS lesson:

> Comprehends the importance of working together. (MONE , 2005p. 62).
>
> Recognizes the skills that developed over time. (MONE, 2005, p. 65).
>
> Identifies his/her problems and is aware of a problem s/he has. (MONE, 2005, p. 67).

In addition as can be seen in the following example some statements in the LSC has not make sense of an acquisition.

> [Students] ask questions about why Atatürk's speech to the youth, Turkish flag, the anthem of independence and Atatürk's picture should be [hang on the wall] in all the classrooms. (MONE, 2005, p.53).

4.1.3. Teaching and Learning Processes

The document analyses results revealed that the Life Sciences Course is founded on a whole teaching approach; during this course students were expected to

learn how to explore the natural and social environment around them. The learning strategies proposed by the LSC were grouped under three main topics: (1) Expository teaching; (2) discovery learning; and (3) inquiry learning strategy.

The document analyses results showed that the proposed teaching methods in the LSC were lecturing, discussion, case study, demonstration, problem solving and individual working. Moreover, the teaching and learning techniques were divided into two groups: (1) group teaching techniques such as brainstorming, demonstration, question-answer, role playing, drama, creative drama, simulation, pair working, group working, micro teaching, observation, description, evaluation, providing written and verbal feedback, and educational games; (2) individual teaching techniques such as individualized education, programmed-education, and computer-assisted teaching (Özdemir & Yıldız, 2009, p.39).

In the prescribed LSC it was stated that:

> Today, new approaches have emerged about teaching and learning processes. Since the students have acquisition through various activities, it is obvious that these teaching- learning activities are the most critical elements of the LSC.
>
> In the teaching and learning processes, the improvement of the students' continuously information updating skills were emphasized in the LSC. In order to achieve this aim the instruction should focus on students' active participation. The teachers should take this into consideration while planning their instruction and encourage the students to engage in the lesson (Taşkaya & Bal, 2009, p.34).
>
> The learning and teaching environment should be formed according to students' preferences and curiosity.(MONE, 2005, p.93).

The teachers' guide books recommended that the related books, booklets, newspapers, periodicals, encyclopedia etc. can be benefited from in Life Sciences courses. Besides, art songs, puppets, role-playing, visitors, story-telling and rhythmic activities were also suggested to use.

The document analyses results showed that in teaching the topics in class, the field trips, observations and projects were given more importance. In the teachers' guidebook it was suggested that the features of the environment and students' needs should be taken into account while planning the field trips, and choosing the project

topics. As it is seen from Figure 4.1, association, progress, continuity, convenience, balance, and consistency have been achieved among the different elements of the curriculum (i.e. themes, acquisitions, skills, activities, and individual characteristics).

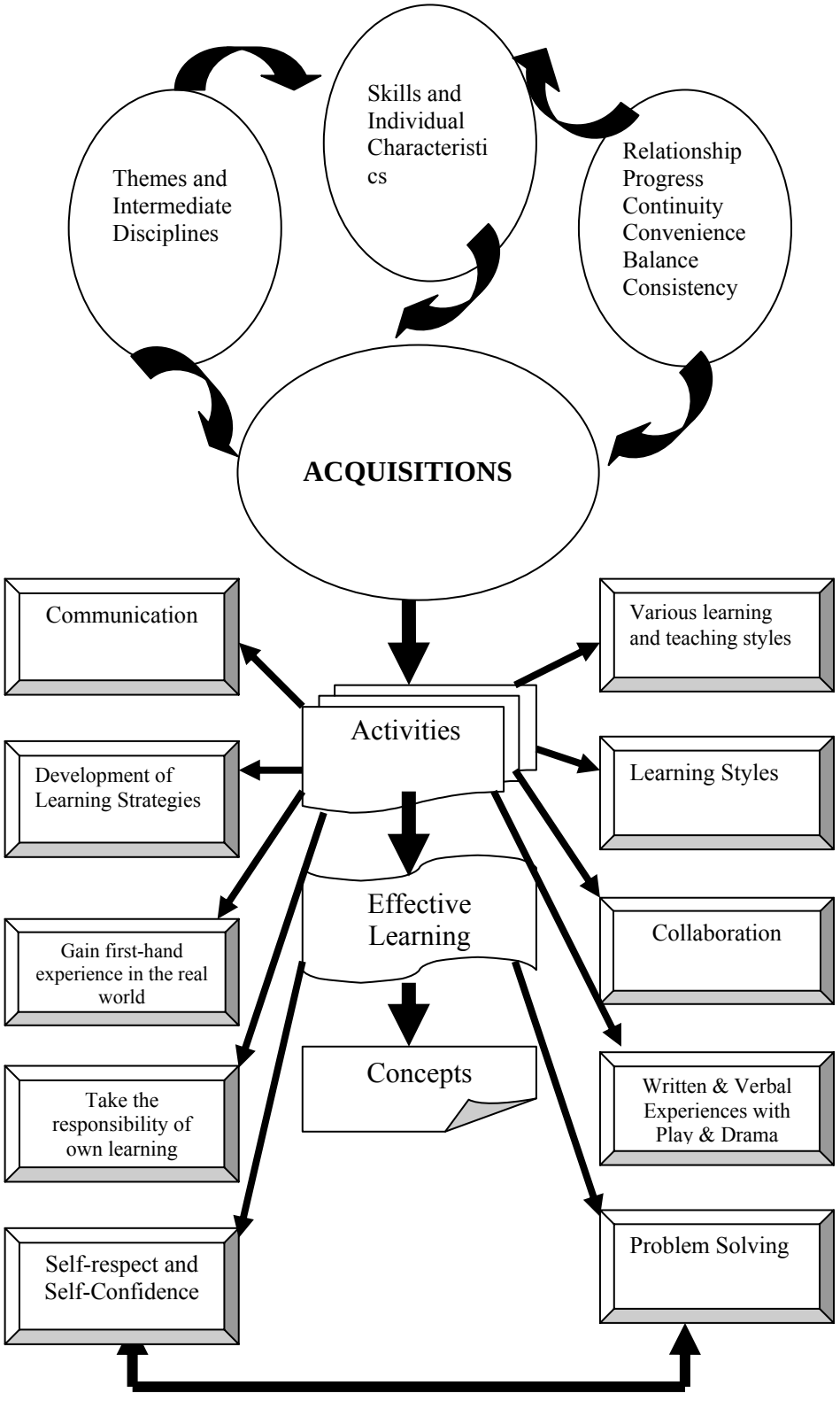


Figure 4.1. The Organization of Teaching-Learning Process in the LSC

4.1.4. Suggested Assessment Methods

The document analyses results revealed that the assessment activities of LS course aimed to assess students' development and success in all aspects of the Life Science Curriculum.

It was seen that the LSC emphasized student-centered instruction, thus, students' individual differences were taken into account when assessing their success. The LSC suggested the teachers that when measuring and assessing students' knowledge, skills and attitudes, they can employ multi-evaluation techniques. The chosen techniques should assess all the skills of the students. Therefore, using only written and oral exams is not enough to measure student achievement. The LSC suggests authentic assessment techniques such as project, diary, portfolio, rubric, checklist, performance assessment, poster, self-assessment, peer-assessment, and group assessment (Özdemir & Yıldız, 2009).

The document analyses results revealed that according to the regulations of MONE, the students cannot be tested in the first three grades of elementary education. Therefore, the teachers should utilize formative assessment as a self-reflection that intends to identify the learning deficiencies of the students and increase student achievement.

4.1.5. Proposed Roles

The LSC emphasized the necessity to change the roles of teachers, students, and parents according to the program's approach. The following lines describe the expected roles of teachers, students, and parents.

Teachers' Roles

The results of document analyses revealed that essential roles of teachers in the LSC were organizing the teaching-learning environment and guiding the students during the activities. Other roles of teachers in the LSC are shown in the Figure 4.2.

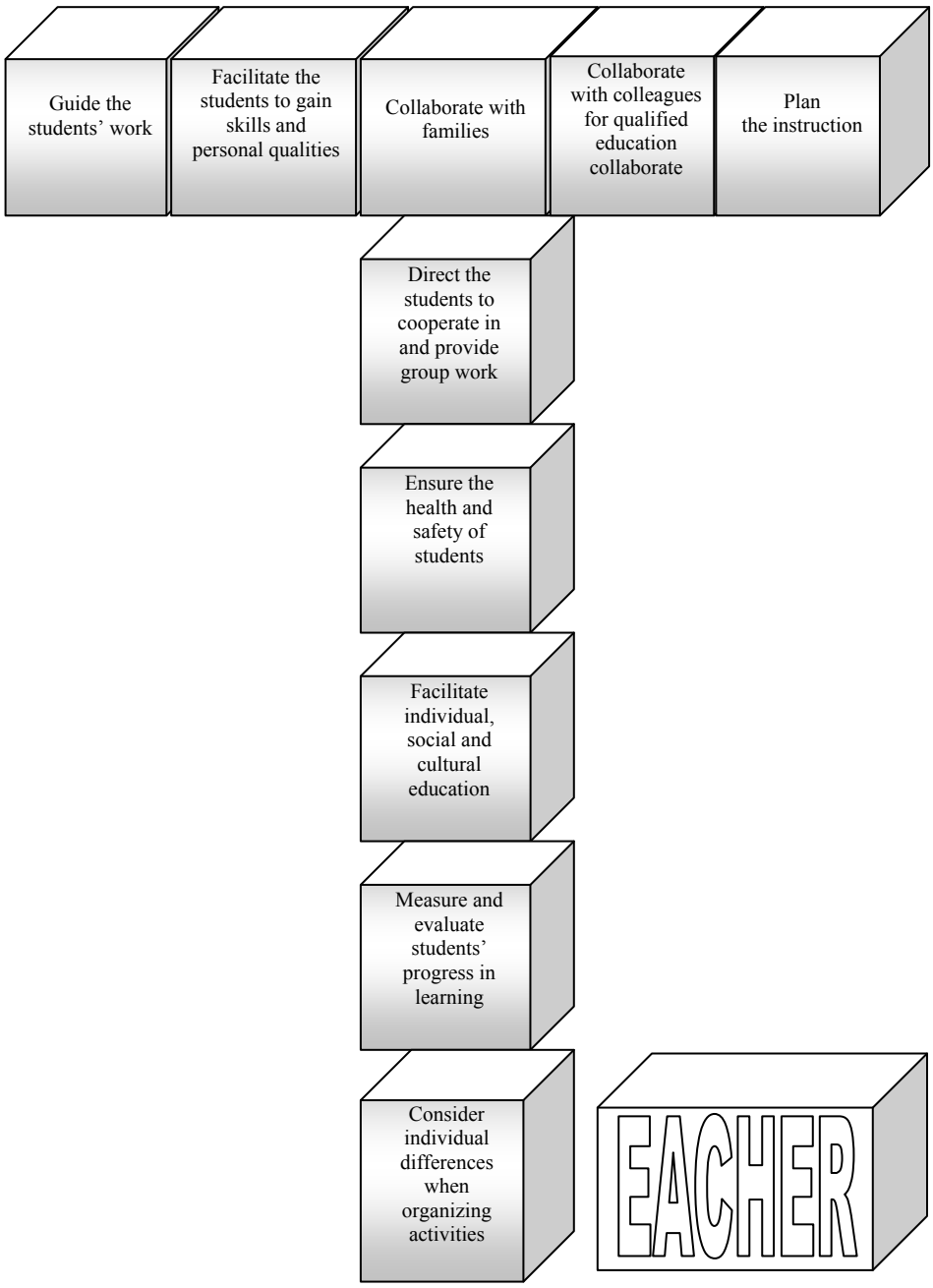


Figure 4.2. The Teachers' Roles in the LSC. (Adapted from MONE, 2005, p.104).

The results of document analyses revealed that according to the LSC one of the main role of the teachers was to ensure parent participation. In the prescribed LSC it was stated that:

> The reasons that may prevent the participation of parents may include the following: Parents' negative experiences from their own schooling; financial problems of parents; parents' lack of time to devote to school; insufficient education of parents; and cultural differences between the

> home and school environments. The teachers can seek different ways in order to eliminate these obstacles; for instance, they can use suggestion cards so as to converse with parents about students' educational accomplishments. These cards include short information notes, suggestions about how parents may help their children with their assignments and information about teaching and learning methods. Parent education, parent meetings and individual interviews with families have been proposed as other communication ways in the LSC. (MEB, 2005, p.107).

Parents' Roles

The results of document analyses revealed that the LSC encouraged active parental involvement. In the prescribed LSC it was stated that:

> The successful implementation of LSC depends not only on teachers and the learning environment, but also on parent involvement. Parent participation facilitates the students to become willing to attend school by conveying the message that school and education are important. Parental involvement also helps the students to increase self-esteem and to develop positive attitudes towards school. Therefore, the LSC aims to include a high level of parent participation. (MEB, 2005, p.107).

4.2. Implementation of Life Sciences Curriculum

The results revealed that there were several factors that have a significant influence on curriculum implementation, such as classroom setting; classroom climate; teachers; administrators; students; parents; teaching activities; teaching materials; and assessment methods. The results concerning the opinions of teachers, students and administrators on these implementation issues of LSC were presented in this part of the study.

4.2.1. Physical Setting of the Classrooms

Classroom organization embodies different conceptions about the learner and the nature of the learning process. In order to understand how teachers conceptualize the teaching learning process, general physical appearance and prominent

characteristics of a classroom were observed and described in detail by the researcher. Students were also asked to draw a picture of their classrooms. Figure 4.3 and Figure 4.4 display the examples of classroom layouts drawn by students.

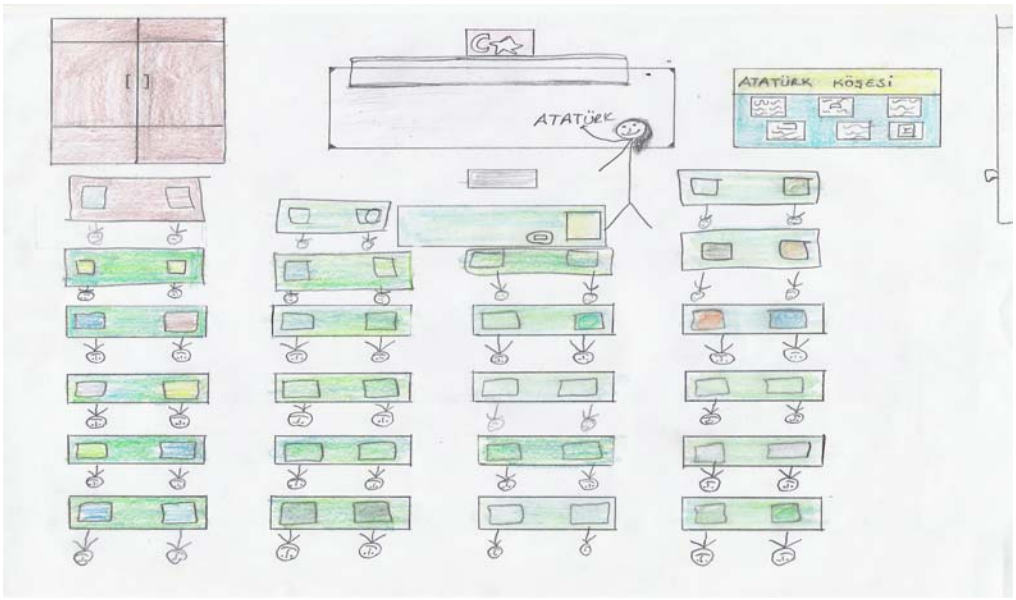


Figure 4.3. The Physical Setting of a LS Classroom from the Students' Perspective-1

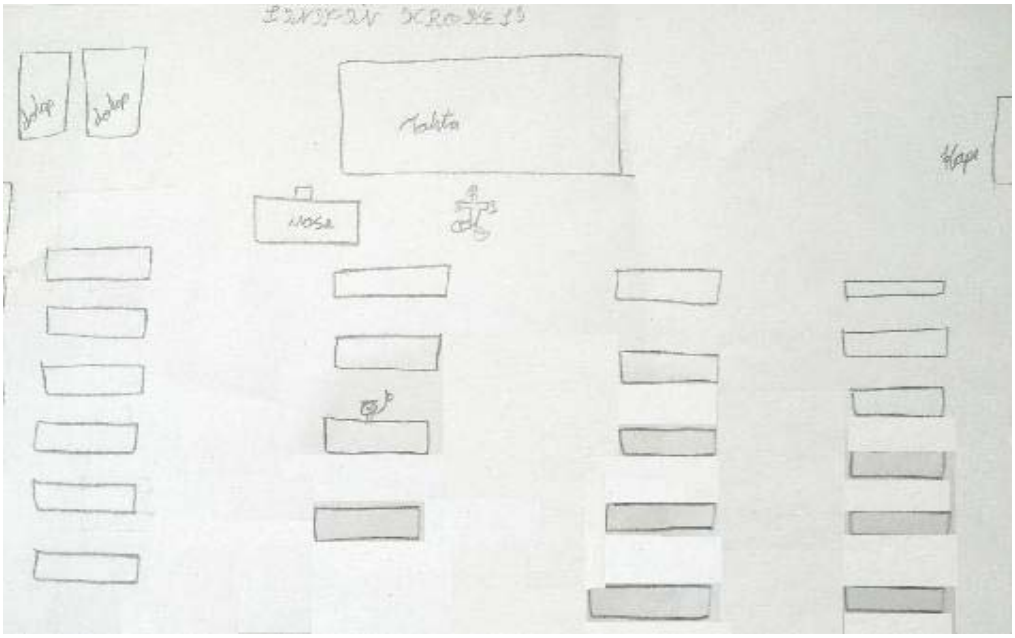


Figure 4.4. Physical Setting of a LS Classroom from the Students' Perspective-2

The results of classroom observations and examination of students' drawings on classroom organization revealed that traditional classroom layout was predominating in all of the observed classrooms. The traditional classroom layout was set up with the desks in rows, and the teachers' tables were placed in front of the

students' desk located near the windows. The aim of this type of placement of the teachers' table might be to control the students.

The teachers stated that they were not happy with this type of classroom organization. However, they think that they do not have any other option. Ayşe said that:

> "…Unfortunately, we could not arrange the desks differently. We had tried to make "U" shape in the Domestic Goods Week *[Yerli Malı Haftası],* but it was impossible. The room's size is not enough to make other arrangements. If we had only 25 students, it would be very nice…" (SRI. Ayşe, p.3)

> "… If the class is big enough, you can do anything you want. But not here." (SRI. Ayşe, p.3)."

The activities made in the classroom and the climates created by the teachers are influenced by the way classrooms are organized (Fields & Fields, 2006). For example organizing the classroom in rows does not provide much opportunity for group work which needs collaboration among the students. Rather, this type of classroom organization is appropriate for delivering lectures.

On the other hand, organizing the classroom in rows has several advantages. It allows the teacher to make eye-contact with all the students and all the students can see the whiteboard or projection screen with no trouble. Moreover, it is easy to control all students in this type of classrooms.

Ayşe maintained that since all students want to sit in front row she planned a seating schedule on a rotational basis:

> "… each day every student will move the front row. So, everyone will be seated in the front desk…" (SRI. Ayşe, p.3).

One of the second grade teachers affirmed that organization of classroom in rows is not an obstacle to special activities. The students easily and quickly re-arrange the desks for group working. She expressed that:

> "I have turned the desks to each other to make the group activities. During the activities ten or twelve students worked together" (SRI. Filiz, p. 7).

The advantages and disadvantages about the seating arrangement can be seen from Table 4.1.

Table 4.1.

Pros and Cons of Straight-Row Classroom Arrangement

Straight-row classroom arrangement

Pros	Cons
• Helps the teachers to monitor the students. • Prevents cheating on the exams. • Allows eye-contact. • Allow to get and keep the students' attention.	• Decrease the student to student interactions. • Prevents group working. • Allow teacher-centered activities. • Large desks decrease the flexibility for arrangements.

It was recognized that when arranging the students' seating plan the teachers considered the students with disabilities at the beginning of the year. One of the second grade classes includes a student with mental retardation and the teacher accommodated him in front of her table to control his behaviors.

As can be noticed from the illustration, the classroom atmosphere looks traditional. Although interactive materials provide real-life experiences for the students and make the knowledge meaningful and functional, the observed classrooms were not rich in terms of materials, books and technology. In order to save space the teachers use walls and the doors for posters, drawings and tables.

As can be seen on following pictures the classrooms consist of Atatürk's Speech to the Turkish Youth, Turkish flag, the anthem of independence, teacher's table, television, visual communications design (VCD), bookcase, several bulletin boards (Atatürk's Corner, Writing Corner, Picture Corner, Theme Corner, Seasons Line). The organization and preparation of the bulletin boards are under the responsibility of students. Giving the students responsibility of their own learning is compatible with the constructivist approach.

The findings about interactive teaching materials were described in more detail in the following sections.

Picture 4.1. Teachers' Desk

Picture 4.2. Bulletin Boards

Picture 4.3. Theme Corner

Picture 4.4. Atatürk's Speech to Turkish Youth, Turkish Flag, the Anthem of Independence

Picture 4.5. Atatürk's Corner

Picture 4.6. Classroom Calendar

4.2.3. Classroom Climate

Classroom climate is the emotional and physical environment or atmosphere created by a teacher. It includes teacher-student interactions, room arrangement, and seating patterns. There is important proof that the classroom climate has a great influence on students' behavior, learning and motivation (Ainley, 1987; Cruickhank, Bainer, & Metcalf, 1999; Gunter, Shores, Jack, Ramussen & Flowers, 1995). Classroom climate can either foster or prevent students' learning. Therefore, the researcher observed the classrooms to describe the nature of learning environment that was created for students by the school, teachers, and peers. During the observations, several environmental factors (e.g., physical, material, organizational, operational, and social variables) and the teacher-student and student-student interactions were considered. That is, the nature of interactions was examined within the classroom environment.

The classroom observations were considered to reveal a perceived quality of the setting. The results of observation revealed that classroom environments were safe and comfortable for the students. It was recognized that the students feel self-worth, and they are eager to learn. Some features of the classroom climate pertinent to such as the interpersonal relationships between teachers and students include care, trust and respect. During the classroom observations it was noticed that students were willing to participate in the course, at least at the beginning of the lesson. The students' motivation and attention was distracted when the teacher only use direct instructional methods such as lecture and demonstration.

The observed teacher-student interactions were grouped into three parts: teacher's speech, students' speech, and the activities done. The following lines elaborate these three parts.

In general, a typical lesson begins with the teachers' speech stating the aims of the lesson.

"The topic for today is our resources." (O1.Filiz, p. 2.).

> "Friday's lesson we had started this topic. What had we done? We had distributed papers to you in order to write our problems. Now we will try to find solutions to our problems together." (O1.Ayşe, p.2).

> "We were prepared for two weeks…We have had very good bulletins they were prepared by the groups. Time has come now to present these products. I'm preparing now to listen to our groups. I will watch your presentations and assess them according to the assessments made by the group members." (O1. Burcu, p.1-2).

Then, the teacher asks a question from the textbook to attract the attention of the students. This helps teacher to ensure the student involvement. The students seem to be aware of the teacher's intentions and ready to concentrate on the teacher's presentation of the topic.

Next, the students answer the teacher's questions. Their words are directed to the teacher not their classmates. Thus, they always begin their sentence with "My teacher", and follow the teacher when she walks around the desks.

Most of the time, the observed teachers answered the students' academic questions, and provided supportive and corrective feedback. The words that were chosen by the teachers while interacting with students influence the classroom climate as well. The results of observations revealed that in order to motivate the students, the teachers used both verbal reinforcements such as "well done", "beautiful", "hmm..", "yes, you are right" and non-verbal reinforcements such as "applauding", "nodding" and "touching their shoulders". These reinforcements cause the students feel that the teacher is listening to them as individuals. In order to handle misbehaviors the teachers warned the students verbally such as "hush", "let's listen", "who is not listening?" and "be quiet". The observations revealed that the teachers sometimes approach the students negatively. For example, during one of the second grade classroom observations, the teacher recognized that the students did not listen to her and she crossed her arms, looked at the students and said:

> "Yes, children, I will wait for you till you become silent. We are here too… we have a guest [the observer], when we have guests you talk more than usual, bravo! Really, bravo!" (O1.Ayşe, p. 13).

The observation results showed that teachers tried to encourage shy and diffident students to share their opinions. One of the observed second grade teachers in the LS lessons indicated that she first allows the volunteer students who raised

their hands to talk and then asks the quiet students who were sitting and listening to the lesson but not participating in the activities. In order to encourage them she says:

"What do you think about this topic?" or

"Could you tell us your opinion about it?" (SRI. Filiz, p.1).

It was observed that at the beginning of the lesson when answering the question Filiz warned the students:

> "Since you always come around and ask me something, my attention is distracted..."
>
> "But, one minute…Voices are coming. One minute... Meltem is reading the most important part…" (O2. Filiz, p.2.)

The results of the observations revealed that the teachers generally want the students sit back and cross their arms on chest. They called this stance '*to become a flower'*. Only one of the teachers declared that she tries not to use this stance:

> "I do not tell the students to become flowers [cross their arms on chest]. I heard it [cross ones arms on chest] is dangerous for health. I'm trying to say to them something like 'sit back'." (SRI. Ayşe, p.12).

On the other hand, Filiz used this stance when she wanted to control the classroom. Filiz said to the students:

"Yes. Let me see you become a flower."

"Yes. Let me see you sit back." (O2. Filiz, p.3).

The results of stimulated recall interviews revealed that none of the informant teachers make a special preparation for the lesson; they only follow the teacher's guidebook. The teachers said that teacher's guidebook explains the teaching of the course step-by-step. The teachers also claimed that the students' textbook has enough questions. Therefore, they did not need to prepare or find any other questions.

The results of observations showed that the teacher needs to walk around the room to ensure that they have control in the classroom. In general the teachers walk around the classroom, monitor the students' responses and provide individual help

when necessary. The teachers affirmed that students seated in the center or front row had a tendency to attend class more effectively but the students sitting at the back did not listen. This situation increases the number of misbehaviors in the classroom. In addition, students who were at the back and corners of the classroom were less likely to interact with the teacher than the students who were close to the front or to the teacher's desk.

It was observed that the teachers were performing their everyday jobs—doing roll call, checking the teacher guide—while listening to students. All of the teachers use same strategies in order to manage the classroom. They increase their voice for attention and gesture anxiously, when the students make noise, jump out of their seats to sharpen pencils, wander around the classroom or talk with their friends. Occasionally, the teachers hit the table to get attention of the students and shouted at the class.

The results of observations showed that all of the teachers were trying to give equal opportunities to all students to express their opinions. Two of the teachers said:

> "…I usually try to allow the child to speak from all levels— the most successful, the intermediate and unsuccessful… I allow the students to speak consistent with their success level. I do not always call successful students." (Şebnem, SRI. p.3).

> "I always monitor my students. Generally, I give an opportunity to the students who are not willing to talk much." (Filiz, SRI., p. 2).

However, the results of observation showed that the teachers were reluctant to foster too much student independence and responsibility. Burcu asserted that:

> "Generally [*90 %*] I made the decisions. If I allow them [*the students*] to decide they would not prepare a journal. It should be really strict. The products would not be produced then." (SRI. Burcu, p. 2).

The quality of classroom environment has an influence on the creativity of the students (Akdağ & Güneş, 2003). That is, in a classroom where the social and emotional needs of the students are met by establishing mutual respect and good relationship; the differences among students were encouraged; the students have a

right to make mistakes and the teachers are tolerant and respectful the students can reveal their potential and creativity (Budak, 1998, p.90-91).

The results of observations revealed that the teachers try to create a classroom climate in which all students have chance to learn and in which the students investigate subjects and ideas in a comprehensive way by looking at them from different perspectives. During the stimulated recall interviews the teachers asserted that they try to be open to new ideas in order to enhance the creativity of students. However, the results of classroom observation showed that in one of the third grade classrooms the teacher was surprised when she encountered a student's unanticipated comment. That lesson they were discussing the concept of family, and the teacher defined the concepts of "nuclear family" and "extended family." Then, she asked the opinions of the students about single-parent families. Although she had expected answers like "mother and father were divorced" and "mother or father is dead", she was surprised when a student answered that "Maybe this woman has adopted the child. Therefore, the child has a single-parent". Şebnem has expressed the difficulties that she had as:

> "I was forced on that topic. I couldn't remove that part from the book because all students' books have that issue. So there I fell into a difficulty. I did not know what to say... I tried to find a common answer that makes all students happy. And I gave an answer that pleases me, too. I do not know whether it is better or worse." (SRI. Şebnem, p.3).

Social Acceptance in the Classroom

The results of stimulated recall interviews revealed that the teachers try to correct students' mistakes immediately, in order to lessen the possibility of new incorrect answers. The teachers stated that the students' mistakes were important in the learning process.

The classroom observations also revealed that the teachers have not reacted negatively the students' wrong answers. It was seen that the teachers generally support and encourage the students to try again when they failed, without weakening the students' self-esteem related to their learning.

The results of creative drama sessions were also supported this result as the students affirmed that their teacher does not reprimand students in front of the class, does not get angry with the students' wrong answers and kindly correct them.

Third grade students asserted that:

> "When we make a mistake our teacher does not get angry" (LET.3Ş, 2).
>
> "Our teacher tells the students who give a wrong answer, *'you are close to the answer, but you should study a bit more'*." (LET.3Ş, 12).
>
> "Our teacher does not angry us." (LET.3Ş, 6).

The results of the observations and interviews revealed that teachers are open to new and different perspectives. They encourage students to share their own opinions. They do not tolerate students teasing each other. They stated that they allow the students to have the opportunity to explore different perspectives. Teachers employ variety of strategies to construct students' choices into their lessons. They recognize and support student autonomy and initiative.

4.3. Teachers and Administrators as Implementation Elements

The teachers' and administrators' expectations and preparedness to the new curriculum have an influence of curriculum implementations. Therefore, their preparations were addressed in the following lines.

4.3.1. Teachers' and Administrators' Preparation

The results of teacher stimulated recall and administrator interviews indicated that before the nation wide implementation of the curriculum the administrators and teachers took at least five-day in-service training. These seminars about the new Life Sciences curriculum were seen inadequate in terms of their scope, organization and sample activities by the teachers and administrators. The results of stimulated recall interviews revealed that these seminars did not provide teachers with sufficient experiences about the specified curriculum. Although the workshops were held mainly by experienced teachers who implement the curriculum in the pilot schools,

the participants of this study were not satisfied with the in-service education they received about the new Life Sciences curriculum.

One of the school administrators declared that:

> "…Even the inspectors who help the workshop did not know the contents of the curriculum...That is, in-service training was not effective because the seminar participants who made the presentations had not come to a certain level of understanding on this issue." (AI.1. p.4).

One of the second grade teachers claimed that:

> "The in-service training was awful. The trainers just read the slides to us. The trainers did not know the curriculum exactly. Thus, I can say that it did not have any contribution to me." (SRI.Ayşe, p.4).

On the other hand, one of the school assistant principals stated that he learned important aspects of the new curricula from the in-service training he participated. He asserted that:

> "In one week in-service training program they told us that in the new curriculum the students should be more active in the lessons, the teacher should guide the students, and students should gain the investigation, questioning, and presentation skills. The teaching activities are not limited to in-class; field trips should be done when necessary. Namely, the students get into the real-life. The teacher should be a guide…" (AI.2, p. 2).

4.3.2. Problems faced by Teachers' and Administrators'

The semi-structured interview and stimulated recall interview results also revealed that when the teachers and administrators first started to implement the curriculum they encountered many problems, especially in assessing students' accomplishment and organizing group works.

One of the third grade teachers affirmed that:

> "…When we met this system for the first time, we had no clue what to do. There were a lot of papers everywhere. Our minds were filled with so many questions such as "How can I copy them?" We were thinking that we cannot assess the group works. So we were not using group work activities. Because we could not assess the children's achievement…" (SRI. Burcu, p. 8).

> "… when we started to implement the program in the first year, we did not know how to assess group work. Because we were expecting that the group work had done at home. Perhaps, because of this... I do not know. I've solved it that way…" (SRI.Burcu, p.9).

The innovated curriculum has been implemented nationwide since 2005, thus, the teachers and administrators have been familiar with the new curricula for at least four years. The results of the interviews and stimulated recall interviews revealed that after two or three years of implementation of the curriculum, both the teachers and the administrators had some experience; and now they are more aware of the potential implementation problems and are taking measures about them any more.

4.3.3. Attitudes towards Curriculum

In order to gain a clear insight into the attitudes and opinions of people who practice the curriculum (i.e. the teachers', administrators and students') about the curriculum change, we must elicit to find out willingness to change and bring about increased ownership of the curriculum (Banning, 1954). As attested by Morris (1988), a reformed curriculum would be more successfully implemented if teacher had more positive attitudes towards it.

Since the reforms have been attempted to change the Life Sciences education both philosophical and structural, it is necessary to change entrenched attitudes of the people who practice it. Therefore, the attitudes—both verbal and nonverbal responses—of the teachers and administrators towards the Life Sciences Curriculum were investigated by using interviews, stimulated recall interviews, and observations.

The results of interviews and stimulated recall interviews revealed that teachers and administrators were satisfied with the curriculum acquisitions, the content of the textbooks, assessment methods and with the activities suggested to encourage students' active participation. They thought that the current Life Sciences curriculum

was better than the old curriculum. It can be concluded that teachers and administrators had positive attitudes towards life sciences course.

The teachers expressed their satisfaction with LSC like that:

> "..Life Sciences course is one of the most enjoyable courses we teach…" (SRI.Ayşe, p.16).

> "The missing parts I have seen in the Life Sciences [*course*]...Now... [*falters*]…Namely, the assessment parts are good. I like questions in the workbook. I also like those questions in the course section, in the preparation section [*the questions stated in the textbook*]. I see nothing missing." (SRI. Şebnem, p.11).

> "..I think this program is better than the old one…" (SRI. Filiz, p.16).

> "With the mutual questions and answers, the student is more active. Each student participates in every activity. Thus, I think it is better... Students became active; the teacher has a relatively passive role." (SRI. Filiz, p.17).

The interviewed school administrator explained the favorite aspects of the new program in the following way:

> "Umm…I think the new program is better than the old one. Because it includes the direction in which the students are challenging to investigate. It has some parts that arouse questions in the students' minds… [*emphasizes*] critical thinking, reasoning, and inquiry. This is very good…" (AI.2, p.6).

On the other hand, one of the assistant principals said that he was not satisfied with the new program. He thought that as a requirement of the new curriculum both teachers and students were assigned new tasks. According to him especially the research homework are very heavy for the students:

> "…every day, they [*the students*] are assigned to make research about a topic. Too many tasks are loaded on the students. Naturally, the child will pass over some tasks. Or s/he will pretend as if s/he had done her/his homework, not to be ashamed to the teacher. This is an indicator of that our education is not...namely the new program is not 100% healthy." (AI.3, p.4).

4.3.4. Acceptance of the Changes of the LSC

The results of interviews and stimulated recall interviews showed that all of the participant teachers and administrators agreed that the implementation of LSC is very successful today. One of the third grade teachers claimed that her lesson is very efficient now. She said she has given this lesson for three years; she has modified and refined it. In the same way, one of the second grade teachers maintained that:

> "We have good performance in Life Sciences course in general. Since the topics include current issues, the children have a lot to tell. As a result, our success in life sciences is sufficient." (SRI. Burcu, p. 4).

4.4. Teachers', Students' and Parents' Perceived Roles in Curriculum Implementation

4.4.1. Opinions about the Teacher's Role

In order to find out the perceived teachers' role, the researcher mainly conducted classroom observations, interviews with school administrators, stimulated recall interviews with the teachers and creative drama sessions with the students.

The results indicated that the role of the teachers distinguished not only in teaching the lesson, but also in effectively managing the classroom and guiding student achievement. It was observed that the teachers have to control the classroom and continue lesson through making immediate and effective decisions and giving directions. The results of interviews and stimulated recall interviews revealed that the teachers' guiding role includes identifying whether the students are mastering the subject matter and providing necessary help when needed.

The results of observations showed that in some of the classrooms the lesson focused on teachers. That is, the teacher reads the topic to the students from the textbook, and asks the questions. Student readers usually cannot retain their attention throughout the class hour, so teachers prefer to read the texts to the students from the textbook.

The results of stimulated recall interviews revealed that second grade teachers were monitoring the students so as to make certain that they were progressing accurately. It can be concluded that teachers need to inspect students in order to estimate student interest during a lesson. It was observed that the teachers try to ensure the students' understanding during and after the each lesson by asking questions.

The teachers' views about their role in the Life Sciences course can be understood from the following quote:

> "I would provide guidance to students and I have the opportunity to see everything they do." (SRI. Burcu, p.9).

> "I encourage my pupils to engage in dialogue both with me and with peers. I generally warn them to talk to peers not to me during the oral presentations." (SRI. Burcu, p.5).

Besides, it was observed that all participant teachers were moving around the classroom while students are working as a part of their classroom activities. While circulating, teachers could monitor students' progresses and understandings, and help those who request assistance.

It was also observed that the teachers were guiding the learner, providing bridging, provoking critical thinking and/or scaffolding. It can be concluded that some teachers encourage the students to expand meta-cognitive skills such as reflective thinking and problem solving techniques.

The results of the observations and creative drama sessions revealed that the students are extrinsically motivated to produce, determine, construct and extend their own knowledge structures. That is, the teachers were providing verbal and non-verbal reinforcement, such as applaud, and stars. These results were summarized on Table 4.2.

Table 4.2. Role of the Teacher in LS Classes from the Perspectives of Administrators, Teachers and Students

	2nd Grade	3rd Grade
Teachers	• Guidance • Convey information • Encourage students' interests • Guide individual development • Affirm student diversity • Identify students' needs • Outline day's agenda • Give an overview of concepts	• Guidance • Lecturer/tells/explains • Facilitator • Provide instructional scaffold • Guide individual development • Affirm student diversity • Identify students' needs • Monitor group effectiveness • Outline day's agenda
Students	• Lecturer/tells/explains • Presents/gives information • Teaches • Gives & controls the assignments • Transfer Information • Angry teacher/ warns • Calls students to the board • Makes students to write • Reads the book • Makes students play a game • Wants the students to participate the lesson • Tells students something funny • Does group work • Roll calls • Asks questions • Helps / Scaffolding	• Lecturer/tells/explains • Presents/gives information • Teaches • Gives and controls assignment • Transfer information
Administrators	• Guidance • Lecturer/tells/explains • Facilitator	

It can be seen from the table 4.6 the teachers and administrators emphasized the role of the teacher as a facilitator. On the other hand, the students have seen the teachers the owner of the knowledge, who knew everything. According to the students, the teachers' role was to teach from the textbook. Further, in students' animations in creative drama session revealed that the students thought the role of the teacher was a knowledge transmitter rather than a facilitator.

4.4.2. Opinions about the Students' Role

The constructivist classrooms require that students reflect on, and talk about their activities; use inquiry methods to ask questions; set their own goals and means of assessment; investigate a topic; use a variety of resources to discover solutions and answers; and control their own learning process.

The results of administrators' interviews revealed that the new curriculum require the students to investigate, interpret, review, and present. The school administrators' opinions about the changed role of the students were stated in the following quote:

> "Today our children are different from the children in the past. We adjust the boards in the corridors according to the length of the students so that they can arrange them. Our aim is to allow the students to join their own learning. They take more responsibility of their learning from now on." (AI.1, p.5).

The results of observations revealed that the teachers expected the students to be respectful of others' thoughts and rights to speak. Besides, the teachers expected that the students follow some guidelines while they were investigating issues such as reading and understanding the research topic first. The teacher warned the students in order to listen to the lesson:

> "You are neither participating in the lesson, nor listening to the lesson" (O1.Ayşe, p. 9).

> "We do not listen to each other. If we do not listen to a person, we could not understand whether he tells the truth or not. We could not know whether the person has good ideas. We will listen and we will understand well…" (O1.Ayşe, p. 16).

> "Would you please listen, son?" (O1, Filiz, p. 10).

> "Let's a bit listen to each other. If you start to speak after your friend finishes we will understand you better." (O1, Burcu, p. 15).

The results of the creative drama sessions revealed that opinions of the students were consistent with the teachers' and administrators' opinions. When they asked in the creative drama sessions to describe the typical delivery of the Life Sciences lesson they displayed opinions by means of drawing, role playing, and writing (See

Appendix K). The results illustrated that listening to the lesson [*the teacher's explanations*] was regarded as the most basic task of students. Here are some of the quotes from the students in the creative drama sessions:

> "Students listen to the teacher and do the assignments given by the teacher." (DOC.3.4).

> "We read the topic from our textbooks, then we review the pictures, and then we interpret the pictures. Then our teacher asks questions and we answer. After that, we write the answers into our notebooks." (DOC.3.8).

> "The students ask questions, give answer, do the activities in the book, and revise the topics that she/he did not understand, read the book, write, do homework, and listen to the teacher." (DOC.2.2).

Table 4.3. *Role of the Students in LS Classes from the Perspectives of Teachers, Students and Administrators*

	2nd Grade	**3rd Grade**
Teachers	• Listening • Answering • Participating in the lesson • respect to others' thoughts • respect to others' rights to speak	• Listening • Answering • Participating in the lesson • Inquiring • Do presentation • Journal • Exhibition • Learn from others • Exchange ideas
Students	• Listening • Answering • Doing homework • Writing • Learning • Playing • Going out to the whiteboard • Addressing the class • Starting to talk after obtaining permission	• Listening • Answering • Doing homework • Writing • Asking question • Interpreting
Administrators	• Listening • Learning • Inquiring • Observing • Exhibition • Take the responsibility of learning	

As can be seen from the Table 4.3 the school administrators', the teachers' and the students' views about the students' in class roles were mostly consistent with each other. The second-grade teachers' expectations from the students were different from the third-grade teachers. Specifically, according to the second-grade teachers, the roles of students include listening to the teacher and peers, answering the questions and doing their homework. On the other hand, the third grade teachers thought that the students' roles include investigating, examining, interpreting, finding solutions, learning from others, and sharing what they learn by presenting. It can be concluded that the students were still seen as passive information receivers by the school administrators, teachers and students. To be precise, these opinions do not fit into the principles of constructivist approach.

4.4.3. Opinions about the Parents' Role

The results of the interviews gave an idea about the parents' roles in the implementation of LSC. According to the teachers, students and administrators, the parents have a critical role in their children's' education. The teachers and administrators expect the parents actively participate in the children's schooling. However, active participation does not mean '*doing homework assignments'*. Both the teachers and administrators agreed that parents should not be doing homework.

The results of the interviews revealed that in order to explain the desired roles of parents, the school arranged a "Parent School Project" with the school's guidance leadership. This project included such topics as efficient study methods, children's developmental stages, and the family's roles in education. The seminars attempted to explain to parents how they can help their children be successful at school, to provide information about effective study skills and about how to prepare for the Placement Exams. However, the school administrator asserted that an inadequate number of parents have participated in training activities served by the school.

One of the second grade teachers affirmed that the parents should create an environment for the students to study. This can be an individual place such as a study room or a corner in the living room. According to her, preparing a corner or a room for students to study indicates how much the parent gives importance to the education of their child. She asserted that:

> "I think the best thing a parent can do is to assign a place for the child to study. It is not necessary to set a room, I think preparing a corner or giving a table set is enough." (SRI, Ayşe, p.15).

The results of stimulated recall interviews illustrated that the parents do not know their child's developmental stages, success and confidence levels. Therefore, the parents expect more things from the students and faced with disappointments. That is, since they do not know the characteristics of the developmental stage their child is in, they sometimes want their child to develop skills over their level. One of the teachers stated that:

> "My parents were complaining very much when we were first grade… Mother does not know what the child can or cannot do at that age… The child is overloaded…the parents do not consider whether the muscles of the child have developed enough [to write]. So, the parents thought that only helping the students to do homework is enough." (SRI. Burcu, p. 13).

> "When the children failed to produce good homework assignments, the parents were coming [to classroom] and apologize. They [the parents] were embarrassed... Parents do not know how they can help the children, so they feel sad and upset." (SRI. Burcu, p. 13-14).

The results of interviews showed that the parents did not know the requirements of the current curriculum, thus, they were complaining about the teachers, textbooks, homework assignments, delivery of the course and the assessment methods. The results of the interviews also revealed that parent participation in homework has become parent undertaking. That is, parents confused when the instructional techniques they use differ from those used by teachers. The following quote demonstrates that how the school administrators summarized the complaints in this regard:

> "…parents began to complaining about the teachers. They say 'Teacher does not lecture, we have to study at home, do homework', 'Why do our teachers do not explain the lesson?' I could not explain the parents the philosophy of the curriculum. They want to do performance tasks of their children." (AI.1, p.5).

> "Parents think that student's homework assignments are too difficult. While they try to help their child they have some difficulties. Sometimes they cannot solve the problems and feel they are ignorant." (AI.2, p.4).

> "Parents have complained about their children not being able to do the new assignments. They said the homework when they were students was easier. Now they do not understand the issues, thus, they cannot help their children." (AI.3, p.2).

The results of creative drama session revealed that the role of families is limited to helping the students' assignments, attending the school meetings, and purchasing the materials required for the lesson. The following quotes that were derived from the creative drama session reflected the views of students about the parent's role:

> "My mother explains to me the topics that I cannot understand." (DOC, 3.1).

> "My father tells me the things that I don't know very well." (DOC, 2.3).

The results on the opinions of teachers, students and administrators about the parents' roles were summed up at the following table according to grade levels:

Table 4.4.

Role of the Parents in LS Lesson from the Perspectives of, Teachers, Students and Administrators

	2nd Grade	**3rd Grade**
Teachers	• Help/guide the students • Attend the school meetings • Setting aside a room or corner for student to study • Be aware of the child's success level • assisting the teacher in the classroom	• Help the student to do assignments • Attend the school meetings • Support and encourage the students • assisting the teacher in the classroom
Students	• Help the student to do assignments • Attend the school meetings • Buy the materials required to the lesson	• Help the student to do assignments • Attend the school meetings • Buy the materials required to the lesson
Administrators	• Help the student to do assignments • Attend the school meetings • Learn the requirements of the new curriculum	

It can be seen from Table 4.4 that the result revealed that the role of the parents was limited to only helping with homework of the students, bringing the students to the school, and purchasing their educational needs.

4.5. Teaching Methods Used in Life Sciences Course

The observation results demonstrated that the instructions in LS classes depended heavily on lecture and question-answer methods. It is well-known that lecturing is not a very efficient technique to deliver instruction because it does not actively involve students in the lesson. It was observed that the instruction was entirely teacher-driven that puts the liability on the teachers' shoulders; the teacher decides the topic, chooses the activities, and asks questions. In this process the students do not have much freedom to make decisions on their own learning.

The results of stimulated recall revealed the teachers summarized the teaching methods that are most appropriate to and mainly used in the Life Science Course:

> "Drama is the most applicable method for the Life Sciences course. We can make short animations in each issue. In addition, we can use the question-answer method. Plus, now we have projection equipment, so we can use slides." (SRI. Burcu, p.12-13.)

> "We watch television [*in the LSC*], and continuously use the computer." (SRI. Filiz, p.4).

While 3rd grade teachers indicated the significance of using animation, the 2nd grade teachers indicated the significance of using lecture in LSC. However, the teachers use drama activities different from actual implementation. That is, they called drama, dramatization, role playing and animation interchangeably. As mentioned at the methodology of this study, the creative drama activities require warm-up, animation, and evaluation. That is, drama is not solely role playing or animation.

The results of creative drama sessions revealed that the second and third grade students mentioned different instructional techniques. Although, second grade students mentioned only direct instructional methods —lecture, question-answer, and demonstration— the third grade students mentioned that brainstorming, drama/role play, and oral presentations are used in the Life Science Course as well. It was

noticed that writing activities are used as punishment (Appendix J). Specifically, both the teachers and student agreed that writing activities are not seen as pleasant activities. In this regard one of the third grade teachers stated that:

"Writing sometimes can really be a chore." (SRI, Burcu, p.11)

Likewise, the students do not like '*punishment of writing*' (quote from students' letters). One of the third grade students wrote in the letter that:

"Dear friend, if you make a mistake, our teacher punishes you with a writing homework." (LET.3Ş, 12).

The results of the observations showed that question-answer method was an integral part of the teaching process. It was noticed that question-answer technique takes most of the teaching time; during the LS course the teachers ask questions to introduce new concepts and get the students to think and students answer.

One of the third grade teachers stated:

"In my opinion, question-answer is the best teaching method for Life Sciences lesson, because it is well-suited to the transmission of conceptual and systematic knowledge." (SRI. Burcu, p.8).

Although constructivism supposes that learning takes place when the students produce questions and seeks out answers (El-Hindi, 1998), it was observed that few teachers allow the students to generate questions and then answers for their own questions. Likewise, the results of the observations demonstrated that the teachers spend a large part of their day asking "wh" questions; (i.e. what, where, when, how, why, who). Four of these type of questions (what, who, when and where) were close-ended and factual recall questions that require a single right answer. Very small percentages of questions teachers ask are 'higher order' questions that encourage pupils to talk and think.

The results of the observations revealed that the teacher's repetition is the most prominent feature of the LS lesson. The teachers were sorting the information in order to help students memorize them. Explicitly, the teacher just says a sentence containing the concept being taught and the students repeat it together and write on

their notebooks. The following cross-section of Filiz's classroom illustrated the teacher-centered and memorization focused lesson. The teacher asked the question and than students answered. Next, the students itemized all the answers accompanied by their teachers:

> [*The teacher said*] "…when we talk about our resources in the school, these come to our minds: one: heating... [*Meanwhile a girl shouted*] "Soap."
> [*The teacher said*] "Let's repeat, what they are?" the class said in chorus "heating".
> [*The teacher said*] "…two, water" [*by showing her two fingers. Then asked*] "What is it?" [*Students repeated*] "Water."
> [*The teacher said*] "…three, electricity." [*Students repeated*]
> [*The teacher said*] "…four, soap,"
> [*The teacher said*] "…five, chalk." (O1. Filiz, p.5).

The results of stimulated recall interview revealed that the teachers use repetition immediately after the explanation of a new topic or concept. They claimed that the students need to repeat the new knowledge in order to ensure familiarity with the concept. The teachers stated that they had a chance to control what the students say and how they use the new knowledge by asking them to repeat it.

A second grade teacher is aware that she often repeats the explanations, and she explains this situation as:

> "Yes, yes. I do it a lot [*I repeat*]. So as to strengthen the information I repeat the explanations in the classroom. Since the children do not forget what they learn by listening, they keep it in their minds; I would certainly repeat previous Life Sciences lessons." (SRI.Şebnem, p.4).

However, the results of the creative drama session revealed that many of the students did not like their teacher's repetition. For the students the teacher's repetition of the knowledge or answers has emerged as one of the most unpopular features of the Life Sciences course. They see repetition as painfully boring and unnecessary. One of the 3rd grade students complained like that:

> "In Life Sciences lessons I do not like that the teacher repeats the course." (LET.3, 13).

Moreover, the results of the stimulated recall interviews revealed that demonstration was another frequently used technique in the Life Science Course. The teachers stated that they utilize verbal explanations, models, questions and pictures in order to display of a concept. The teachers present slide shows, video tapes, power point presentations or TV program as well. They affirmed that demonstration method can stimulate multi-senses of the students and increase the retention of learning.

This finding is supported by Filiz's and Ayşe's words:

> "We use demonstration. During the demonstrations we show pictures. I find and printed some pictures from the computer and display in the lessons." (SRI. Filiz, p.4).

> "I believe that it would be very beneficial if we used projection in the classroom. Because when the children see they can understand better… Today, for example, in the Life Science course we learnt our bodies and our organs. I brought model of the body from the school laboratory. Children have touched the heart and lungs… If the learning is reinforced with an image, it is more permanent." (SRI. Ayşe, p.12-13).

It can be concluded that during the demonstration students just observe the teacher, watch the material (i.e. video, or film), ask questions and answer the teacher's questions. That is, the students still remain as passive recipients.

In addition to the above, both the teachers and students like group work activities. The following excerpts revealed the opinion of students and about group work as the main instruction technique employed in Life Sciences Course:

> "If I want to do some group work in class, I allocate enough time for it. I'm not sorry when we spend so many hours for group work activities. The group work helps students practice the acquisitions of the Turkish course as the children are paying attention to spelling rules and try to write a poem or a story during it. The group work also requires drawing pictures that is one the acquisitions of the visual arts course. That is, group work does not lead to loss of time, but allows the integration of disciplines." (SRI. Burcu, p. 9).

The stimulated recall interview results revealed that the teachers recognized the educational benefits of cooperative groups. They affirmed that group work enhances learning and those who practice group work understand the importance of group work on the improvement of collaborative working and other skills. Further, the teachers agreed that in group work students learn from each other. On this issue Burcu and Ayşe expressed their opinions as follows:

> "I enjoy utilizing the group work in class. I see that the children enjoyed it too. Even the children who do not accomplish the tasks alone contribute to the group work. Students also see the benefits of working together and accomplishing the tasks." (SRI.Burcu, p.3).

> "Children feel a sense of success with group work." (SRI.Burcu, p.3).

> "There were children who do not contribute to the group work… We gave them simple tasks such as putting glue. So, they started to contribute at least to something." (SRI. Ayşe, 16).

> "Group work helps the students to understand and respect each other. They learn to support each other as well… They also have the responsibility of their work. That is, they think that if I make a mistake, it will affect the success of the whole group. As a result they become more careful in group work." (SRI. Ayşe, 16-17).

> "I believe that group work is useful. In group works many ideas come together and reveal good products. I really like group work. The students like it too… I believe that the students learn how to collaborate in group work activities." (SRI. Ayşe, 17).

The results of stimulated recall interview revealed that since the classes were very crowded the teachers hesitate to employ group work activities. One of the third grade teachers admitted that when the curriculum was being implemented for the first time she utilized the group work activities in a wrong way. Specifically, she had assigned group work as homework and then both the students and the parents had complained.

The results of stimulated recall interview also revealed that one of the crucial issues with the group work as homework was that only one or two students prepared their homework with their parents and other group members did not take responsibility.

Another important issue with the group work was forming the groups. It was observed that the teachers formed the groups without consulting to the students. It was seen that the teachers have not followed a systematic process to form the groups. Some teachers grouped the students according to their abilities, skills and knowledge. The groups consisted of individuals with varying skills and knowledge, in order to teach the students to share their opinions and knowledge with other members, to reflect on the group's problem-solving methods, and produce a personal problem-solving strategy. Other teachers grouped the students according to their seating arrangements.

Additional issues, that were confronted by the teachers when their students work in groups, include assessing the individual performance of the students and teaching the ways to develop the skills for collaborative work.

The results of interviews showed that the administrators thought that group work is not appropriate for large classes. One of the administrators claimed that:

> "…I have a problem with this [*group working*] just like…it is very hard to implement group work in large classes. The teachers form groups, but do not control who work for and who did not work for the project. Only a few students do the work in the groups. Other students *[in the group work*] have received the same score without doing anything." (AI.2, p. 6).

The results of stimulated recall interviews revealed that when students work collaboratively and cooperatively with peers, the teachers encourage the students to have some responsibility to work together for the achievement of both the group and themselves. Although the teachers had some troubles during the first implementation of group work, both the students and the teachers have positive attitudes toward it now. Filiz, Ayşe, Burcu and Şebnem explain the benefits of the group work:

> "Students can gain communication skills, learn to share and collaborate." (SRI. Filiz, p.7).

> "Sharing ideas and problem solving strategies help the students to perceive themselves as successful and capable." (SRI. Filiz, p.8).

> "In the group work activities each student expresses his/her own individual preferences and opinions. If the group members agree on these opinions, the group work is completed efficiently." (SRI, Ayşe, p.15).

> "They have the sense of achievement. In doing so [*refers to do group work*], students not only learn from each another, they also develop friendships. Namely, the child who may not be able to complete the task alone can do it with their friends. Children combine their efforts with the efforts of their group mates to complete the task." (SRI, Burcu, p. 4).

> "In this group work process, students working together produce valuable products. For instance, each student has to take a responsibility. Since each student shares the responsibility with their peers all students contribute to group success." (SRI, Şebnem, p. 9).

However, the results of the observations showed that the teachers did not provide frequent opportunities for students to work in pairs or small groups to explore concrete materials, share ideas, and create group products.

The results of stimulated recall interviews also revealed that the teachers have remained unconvinced of using different teaching methods that support the students to solve problems, and to carry out real-life related tasks. They explained the reason for this as the classrooms were very crowded and the place was not appropriate for different activities. Besides, they stated that it is difficult to provide appropriate assignments for different levels of ability in such a crowded classroom. Moreover, some teachers regard methods other than lecture as time-consuming and there is too much work to be done and little time to do it in. It was observed that some of the teachers are not confident about their skills needed to employ group work as a teaching method.

Table 4.5.

Main Teaching Techniques used in Life Sciences Course

	2nd Grade	**3rd Grade**

Teachers	• Reading
	• Writing
	• Direct instruction
	  o Lecture
	  o Demonstration
	• Question-answer
		• Reading
		• Writing
		• Lecture
		  o Lecture
		  o Demonstration
		• Question-answer
		• Brainstorming
		• Visual reading
		• Animation
		• Drama/Role play
		• Presentation
		• Group working
		• Interpretation

Students	• Lecture/explanation • Question-answer • Drawing/painting • Reading • Writing	• Lecture/explanation • Question-answer • Drawing/painting • Interpretation • Animation • Drama/Role play • Brainstorming • Playing • Writing poetry
Administrators	• Lecture • Question-answer • Inquiry • Discussion	

The results of stimulated recall interviews, observations and creative drama session showed that teachers do not give much room for innovative methods in the Life Science Course. Lecture, demonstration and question and answer were mainly used teaching methods and techniques. Even though educational experts, reformers and intellectuals see direct instructional methods as inadequate and information technology has made lecturing out of date, the participant teachers persisted to use lectures. Surprisingly students also preferred the lecturing as a method of instruction in LS classes.

4.6. Instructional Materials Used in Life Sciences Course

Responses from school administrators interviewed about the instructional materials were quite consistent. The school administrators noted that after the curriculum reform the school's hardware has been changed. They installed

projection equipments and interactive board into some classrooms. The administrators also declared that all classes will be fitted with a projection equipment and computer in line with the financial means. The following passage showed one of the co-administrators' thoughts on this topic:

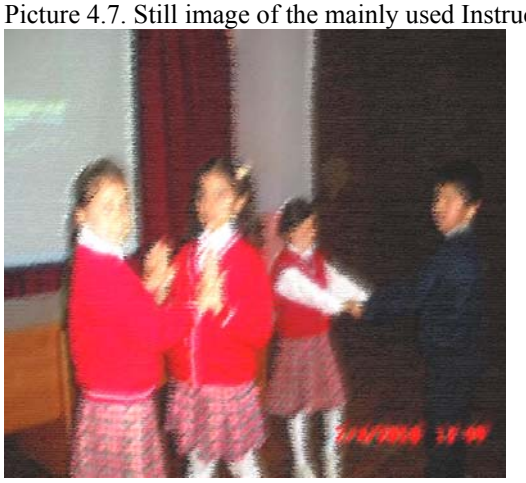
> "With this process in our school we installed Internet connection to the large part of our classrooms. They have Internet. We installed computers in our classrooms. They have computers. We put on the projection screen and projector and now our students…with respect to the information…they can do this over the Internet in our classrooms. They can be connected to the Internet easily in their classrooms." (AI.2, p. 2).

Although none of the classroom had a computer and projector during the first observation, during the second classroom observations it was seen that computers and projection equipments were installed to three of the classrooms. This finding confirmed what the school administrators said in the interviews.

The results of the stimulated recall interviews revealed that the teachers were not often provided with the classroom resources needed for instruction and many teachers purchase their own classroom supplies, books, or materials for use by the students.

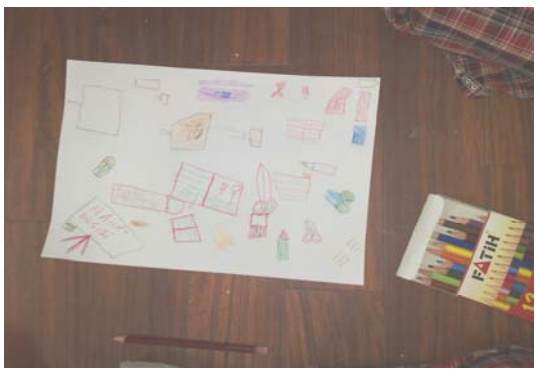
The results of the observation showed that teachers regularly use whiteboards in order to write terms, itemize answers, and draw pictures, and give time the students to take notes. On the other hand, the teachers could not use these interactive materials effectively. That is to say, the televisions do not have antennas, so they are not receiving the broadcast. The results of stimulated recall interview, observations and creative drama sessions revealed that both the television and VCD were not used very often. Televisions were merely used to watch cartoons and listen to music. Besides, the teachers have some difficulties using the projection equipment and the computer. During the second observation one of the third grade teachers had a trouble with the projection equipment and asked the help of another teacher. Similarly, one of the second grade teachers said that the mouse and VCD were out of order. Moreover, the teachers are using computers for limited purposes, such as slideshow presentations, watching documentaries, and listening to music. The results of the observation showed the projection equipment and computers were used only by the teacher, thus, the students remained passive audiences. Students just watched the new hardware as audiences. The following pictures illustrate drama sessions.

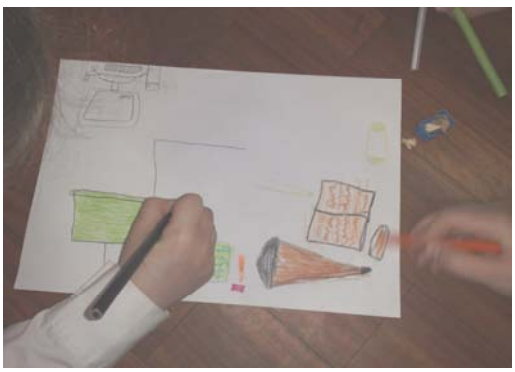

Picture 4.7. Still image of the mainly used Instructional Materials in LSC- *"pencil"* and *"CD"*




Picture 4.8. Still Image of Mainly Used Instructional Materials in LSC- *"Textbook"*, *"Notebook"* And *"Computer"*







Picture 4.9. Students' drawings of the mainly used Instructional Materials in LSC

The results of creative drama activities illustrated that textbooks, notebooks, pencils, papers, whiteboard, scissors, board marker and glue are the mostly used materials in the Life Sciences Course. As can be seen in the pictures 4.7, 4.8, and 4.9, the students expressed their opinions about the materials that mainly used in the LSC through still images and pictorial displays (group drawings) (Appendix I).

Table 4.6

The Materials used in LS classes

	2nd Grade	3rd Grade
Teachers	• Textbook • Whiteboard • CD • TV	• Textbook • Whiteboard • CD • TV • Computer • Projection equipment
Students	• Textbook • Notebook • Pencil • Whiteboard • Board marker • Scissors • Pencil sharpener • Glue	• Textbook • Notebook • Pencil • Whiteboard • Board marker • Scissors • Pencil sharpener • CD • TV • Computer • Projection equipment
Administrators	• Computer • Projection equipment • Interactive board	

As can be seen from the Table 4.6 the main teaching materials were textbooks, workbooks, and the white boards. Although the classrooms were technology rich environments, teachers' technology literacy may be inadequate to integrate these interactive materials into their instruction.

4.7. Assessment Techniques used in Life Sciences Course

The result of stimulated recall interviews revealed that the teachers mainly use written exams and classroom observations when assessing students' success. Burcu

expressed the assessment methods that she has been utilizing in LS course and the reasons why she has decided to use these methods in the following quotation:

> "Now we are applying different assessment methods, but it is a fact that to apply those different methods in forty-five-student classrooms is a great load on teachers shoulder. This is very harsh for the teachers…It is very good to assess the child with different methods. If the students failed in an assessment (i.e. a written exam) they can express themselves in other assessment (i.e. presentation). However, it is very hard and exhausting to employ authentic assessment in large classes. Moreover, we give the performance of tasks and group works." (SRI. Burcu, p.13).

Similarly, after interviewing the administrators, two major assessment techniques appeared to be the most frequently used assessment techniques: written exam and observation.

The results of the observations also revealed that the teachers rarely used authentic assessment methods. The observation of one of the third grade classrooms illustrated the usage of group assessment. In that lesson, group assignment, classroom observation and written examinations were used. For the group assignment, students were required to do ten minute presentations on a topic chosen. The teacher used group-assessment scales and peer assessment scales while grading the groups (Appendix M & Appendix N).

The stimulated recall interview results indicated that one of the second grade teachers asserted that she assessed the process rather than the product. The following quotes illustrate her attitudes about student assessment:

> "My assessment usually depends on written exams. I also consider their classroom participations; in class activities…I assess them as a whole." (SRI. Filiz, 11).

> "For example, when assessing their journals I use the following criteria: how they attached the pictures on their journal, which topics were chosen, were there integration among the topics, how they complete it, did their parents help them, did they prepare that assignment without help…I mean I assess the process of journal preparation. I assess the students according to their activities. " (SRI. Filiz, 11).

One of the third grade teachers stated that she used peer assessment and group assessment in the LSC. The next passage demonstrated her expressions about assessment:

> "I once conducted peer assessment. Moreover, I continuously monitored them to see that what they were talking about, how they overcome the group conflicts. So I get opinions about their contributions to the group work, and recognized how much responsibility taken by each student." (SRI. Şebnem, p, 9).

> "I assess the students during the lesson." (SRI. Şebnem, p, 12).

> "I assess the same topic by using different methods. I mean when the assessment questions in the textbook I make an oral exam. Then I conducted a written exam. Of course, I did not assign a score on these assessments. They are [the assessments] aiming to identify what the students know and do not know… I adjust my instruction according to the results of these assessments. I make out the success rate. And than I recognize the deficiencies." (SRI. Şebnem, p, 13).

The results of stimulated recall interviews revealed that the teachers were not familiar with the authentic assessment techniques; therefore, they were hesitating to employ them. Performance assessment, peer assessment and group assessment methods were utilized by teachers, but not very often and effectively. The document analyses revealed that the teachers generally ask recall questions in the examinations. The answers of the exam questions require memorizations of the information. The following quotes illustrate some of the exam questions used in LS lesson:

> "When we are celebrating the Primary Education Week?"
> "What are the names of the schools that Atatürk went?"
> "What is nuclear family?"

Table 4.7 summarizes the assessment techniques that are used most frequently in LS lesson.

Table 4.7.

Assessment Techniques used in LSC

	2nd Grade	3rd Grade
Teachers	• Written exam • Observation • Oral examination • Self-assessment	• Written exam • Observation • Self-assessment • Peer assessment • Group assessment
Students	• Written exam • Observation • Self-assessment	• Written exam • Observation • Self-assessment
Administrators	• Written exam • Observation	

The results of the interviews, stimulated recall interviews, observations, and creative drama sessions showed that the traditional assessment methods were still widely used in Life Sciences Course. The third grade teachers used authentic assessment (i.e. group assessment, peer assessment) techniques rarely. It can be concluded that the teachers still emphasize summative evaluation rather than formative; traditional assessment methods rather than authentic assessment methods in LS classes.

4.8. Consistency between the Implementation of Current Life Sciences Curriculum and the Specific Recommendations offered by Constructivism

The results of the data analysis related to constructivist classroom characteristics including learning activities, assessment, teaching materials, teaching methods, critical thinking, group work/ cooperation, guidance, meta-cognition, support, and administrators', teachers' and students' opinions about learning and teaching in constructivist classroom were interpreted in the following lines.

A constructivist teacher and a constructivist classroom exhibit a number of discernable qualities markedly different from a traditional or direct instruction classroom. A constructivist teacher is able to flexibly and creatively incorporate ongoing experiences in the classroom into the negotiation and construction of lessons with small groups and individuals. The environment should be democratic, the activities are interactive and student centered, and the students are empowered by a teacher who operates as a facilitator/consultant.

The results of document analyses revealed that the Life Sciences Curriculum has been developed in accordance with the constructivist approach.

> "2005 LCS reflects the constructivist approach in which the individuals interact with various stimuli and make a meaning; and learners construct their own understanding." (MONE, 2005, p. 247).

In the following lines the implementations of the current life sciences curriculum have been described by comparing the practices with the specific recommendations offered by constructivism. In order to deeply understand how the LSC is implemented the researcher utilized several observations in selected classrooms. As additional techniques, she also conducted interviews with administrators and stimulated recall interviews with the teachers. Besides, students' animations about the implementation of Life Sciences Lessons were used.

The results of document analyses revealed that the LSC is not a teacher-centered instead student-centered curriculum (MONE, 2005, p.248). The student-centered learning appears to relate primarily to the constructivist approach, which emphasizes activity, discovery and independent learning (Carlile & Jordan 2005).

Nowadays, the teacher-focused and information transmission instruction techniques such as lecturing are severely criticized and student-centered approach began to be widely accepted (Lea et al. 2003). However, the results of the classroom observations and creative drama sessions revealed that the LS lessons were not completely student-centered. That is, students are mostly taught in a rational order through teacher directed questioning and lectures.

The results of observations revealed that several students were very enthusiastic to participate in the lesson, but their participation was limited to answering the teachers' questions. Although active participation of students in classroom activities was encouraged by all of the teachers most of the students remained as passive recipients.

In constructivist classrooms, students often work in groups and learn collaboration and exchange of ideas. The results of observations, stimulated recall interviews and creative drama session revealed that although both the teachers and students stated that they liked collaborative working, group work was not used very often by teachers in the LS classes.

Students, who actively participate in the learning environment, can build their own meaning and their own knowledge. The results of observations revealed that in order for the students to construct their own meaning, the teachers were trying to engage the students in the lesson by asking thoughtful questions and use real-life related examples. Filiz asked:

> "Can you tell me whether it is necessary or unnecessary to turn on the lights at the moment?"
> [*Student answered*] "Unnecessary."
> [*The teacher asked*] "Why?"
> [*Student answered*] "My teacher, more electricity is out, mmm… [*he thought for a while*] the weather is morning [*He wanted to say it is not dark*] If it was evening, we would turn on." (O1. Filiz, p.6).

If the students know something about the content area, and the concepts taught have a meaning in their everyday lives and culture, they learn better. The results of observation revealed that the teachers generally attempted to establish a connection between new information and students' prior knowledge by asking them thoughtful questions and similar experiences. It can be concluded that the teachers were trying to activate the students' curiosity and interest in order to make sense of the instruction delivered. The following section quoted from one of the second grade classrooms LS lesson illustrates this interpretation:

> "[*Teacher*]: Do you usually go to shopping on weekends, or per month?
> [*Student*]: Yes.
> [*Teacher*]: So, do you make a grocery list?
> [*Student*]: Yes.
> [*Teacher*]: So, suppose went to the supermarket. You have got a list in your hand. What do you pay attention to when shopping? "
> [*Student*]: (*thinks*). I buy the things missing at home...
> [*Teacher*]: (*repeats*) mmm yeah. You said that you will buy the things missing at home. What else?
> [*Student*]: I will not buy junk food.
> [*Teacher*]: (*repeats*) You said that you will not buy junk food. What else?
> [*Student*]: That's all.
> [*Teacher*]: He says that when he goes shopping, he put his needs in priority order…" (O1. Filiz, p.15)

In the constructivist approach, knowledge acquisition process is as important as the product; therefore, in the constructivist classes, the emphasis is given onto

formative assessment rather than summative assessment. That is, not only tests, but also the student observation, the student's performance, and the student's view points were assessed by using authentic assessment methods.

The results of document analyses revealed that the students' workbooks contain self-assessment forms at the end of each theme. It was observed that teachers use self-assessment in LS lessons. The results of the stimulated recall interviews revealed that the teachers rarely employ the group assessment rubrics. However, the results of stimulated recall interviews showed that the teachers were still skeptical of authentic assessment methods that encourage the students to perform real-life related tasks. The teachers still continue to use traditional assessment methods. Some of the teachers thought that the performance tasks were time consuming and useless. Therefore, they were giving performance tasks as homework assignment. When students were given performance tasks for home, their parents do their homework, so the students do not learn anything. One of the third grade teachers claimed that:

> "I think the performance tasks are needless. When we give them as homework assignments the parents do the tasks, when we try to do them in class it takes the whole school day." (SRI. Şebnem, p.14).

Metacognition as one of the important concepts in the constructivist approach includes knowledge about when and how to use particular strategies for learning or for problem solving (Metcalfe & Shimamura, 1994). Meta-cognitively aware learners are more strategic and perform better in problem solving situations than unaware learners (Winn & Snyder, 1998).

The results of classroom observations revealed that the students' thinking processes were not addressed in the LS lessons. That is, the teachers have used only questioning method to identify student's thinking processes. They have not provided opportunities to help the students to recognize their own way of learning and cognitive processes. As a result, it seems that the students were not aware of their own learning processes. During the observations it was noticed that the students only use internet as an information resource when they asked to make inquiry on a topic.

The results of stimulated recall interview revealed that the students have not distinguished between primary and secondary sources and do not know how to access to the library.

The results of classroom observations also revealed that the students had some troubles with the time management, and planning the study time. That is, the students were unable to finish their group tasks on time.

The results of classroom observations revealed that one of the third grade teachers were trying to help students improve their problem solving and meta-cognitive skills by asking questions. The teacher wants students keep an eye on their own learning by questioning and self-testing. She has asked them to think the learning process, monitoring what worked and what did not work for them.

> "How did you solve the problem?" (O1, Burcu, p.7).

> "What could be the causes of not being able to complete this journal on time for you?" (O1, Burcu, p.14).

In the constructivist classroom, the teacher's role is to guide and facilitate students' progress. Thus, the teachers should emphasize guiding students by asking questions that will lead them to develop their own conclusions on the subject. Thought provoking questions of teachers facilitate the students to monitor their own progress as they learn and to learn how to question oneself to solve problems.

The results of classroom observations revealed that although asking a question is fundamental in the LS lesson, the teachers have not concentrated on the thought provoking questions.

It is crucial that constructivist curriculum should be changeable and flexible in order to be altered by the students and teacher when needed (Cunningham, 2006). The results of document analyses revealed that the LSC has not been suggested to be implemented like a prescription (MONE, 2005). The results of stimulated recall interviews revealed that the teachers have not adhered strictly to the stated to curriculum; instead they pursuit students' needs and progresses. Şebnem said:

> "When not enough time was allocated to one subject, I adjust the time according to my class. If my students have deficiencies on the issue and if that issue is important to me and it is not possible to explain that issue in only one class hour, I will extend it two hours or even to three lessons." (SRI. Şebnem, p. 12).

> "It is very important that students and the people around them become aware of the needs and the capabilities of the students. The students

> who do not know the mathematics are seen as unsuccessful in our education system. However, the child should say "I have an artistic talent," "I have a talent in music" or "I have a talent in writing ". Both the child and the people in her/his environment must be aware of and value these capabilities." (SRI. Burcu, p. 6).

This study clearly shows that some aspects of the life sciences course were still implemented according to the behavioral approach. The teachers were using extrinsic rewards; non-verbal reinforcements (i.e. applauds, stars, sign, stickers, touching the shoulders) and verbal reinforcements (i.e. well done, good, congratulations). The teachers have considered that extrinsic rewards were suitable and efficient ways to modify students' behaviors.

4.9. Summary of the Findings

Overall it can be argued that although some of the recommendations of constructivist approach to curriculum implementation were evident in LS classes, majority of activities seem to be inconsistent with constructivist approach. Table 4.8 summarizes the findings of the study.

Table 4.8

Summary of the findings

A. General Characteristics of LSC
The content of the LSC • has been organized around three thematic units, • considered the developmental levels of the individual, • was depended on the real-life issues. Although there were some errors the sequencing of the content, the content of the LSC were conducive to the constructivist approach.
The acquisitions of the LSC The acquisitions of the current LSC require the students to recall or recognize the facts rather than critical thinking, analysis, and problem solving. Some of the acquisitions were not clear. That is, two or more acquisitions were stated in the same sentence. The acquisitions of the LSC were not conducive to the constructivist approach.
Teaching and Learning Processes

The learning strategies

The learning strategies proposed by the LSC were grouped under three main topics:

- Expository teaching
- Discovery learning
- Inquiry learning strategy

The learning strategies proposed by the LSC were conducive to the constructivist approach.

The Teaching Methods

The LSC was based on whole teaching approach. The suggested teaching methods in the LSC were

- lecturing,
- discussion,
- case study,
- demonstration,
- problem solving,
- individual working.

The teaching methods proposed by the LSC were conducive to the constructivist approach.

The Teaching Techniques

The proposed teaching techniques in LSC were divided into two groups:

(1) Group Teaching Techniques;

- brainstorming,
- demonstration,
- question-answer,
- role playing,
- drama,
- creative drama,
- simulation,
- pair work,
- group work,
- micro teaching,
- observation,
- description,
- evaluation,
- providing written and verbal feedback,
- educational games.

(2) Individual Teaching Techniques

- individualized-instruction,
- programmed-education,
- computer assisted teaching.

The suggested instructional methods of the LSC were conducive to the constructivist approach.

Suggested Assessment Methods

The LSC has emphasized formative assessment and suggested both traditional and authentic assessment methods.

Traditional Assessment Methods	Authentic Assessment Methods
• written exams, • oral exams, • classroom observation.	• project, • diary, • portfolio, • rubric, • checklist, • performance assessment, • poster, • self-assessment, • peer-assessment, • group assessment.

The suggested assessment methods of the LSC were conducive to the constructivist approach.

Proposed Roles

Teachers' Roles

According to the LSC the roles of the teachers were to:

- guide the students' work,
- help students to gain skills and personal qualities,
- collaborate with families,
- collaborate with colleagues for qualified education,
- direct the students to cooperate and provide group work,
- facilitate individual, social and cultural education,
- measure and evaluate students' progress,
- consider individual differences when organizing activities,
- plan instruction, and
- ensure the health and safety of students.

The suggested teachers' roles of the LSC were conducive to the constructivist approach.

Students Roles

The LSC has envisaged the students' active roles instead of only receiving the given information. The students' roles include

- asking questions,
- establishing the problems,
- solving problems,
- searching, and
- assessing.

The suggested students' roles of the LSC were conducive to the constructivist approach.

Parents' Roles

The LSC encouraged active parent involvement which is conducive to the constructivist approach.

B. Elements of Curriculum Implementation

The Classroom Setting

The traditional classroom setting (i.e. the desks in rows) was predominating in the classes.

Classroom settings were not conducive to the constructivist approach.

Classroom Climate

In the observed LS lessons

- the students feel self-worth,
- the interpersonal relationships between teachers and students include care, trust and respect,
- all students have the right to speak, share ideas and respect each other.

The classroom climate created by the teachers in the LS lessons was conducive to constructivist approach.

Teachers and Administrators

Teachers' and Administrators' Preparation

Before nation wide implementation of the curriculum the administrators and teachers participated in at least five-day in-service training. However, these seminars about the current LSC were seen inadequate in terms of scope, organizations, and the nature of sample activities by the participants.

Problems faced by Teachers'

The teachers encountered many problems when they started to implement the curriculum for the first time. They particularly had difficulties in changing their instructional and assessment methods and techniques.

Attitudes towards Curriculum

Teachers and administrators have positive attitudes towards LSC.

The Roles

Teacher Roles

The most commonly stated teacher role characterized by student is transmission of knowledge.

The most commonly stated teacher roles by the teachers and administrators are

- managing classroom,
- guiding,
- monitoring, and
- facilitating.

The perceived teachers' roles in the LS lessons were not conducive to constructivist pedagogy.

Students Roles

The student roles according to 2nd and 3rd grade students, teachers and administrators include
the followings:

2nd grade students	3rd grade students	Teachers	Administrators
• listening to the teacher and peers, • answering the questions.	• listening to the teacher and peers, • answering the questions, • doing their homework, • investigating, • examining, • interpreting, • finding solutions, • learning from others, • sharing what they learn by presenting.	• listening, • answering, • participating the lesson, • inquiring • doing presentation, • exhibiting, • learning from others, • exchanging ideas.	• listening, • learning, • inquiring, • observing, • exhibiting, • taking the responsibility of own learning.

The perceived student roles in LS lessons were not consistent with the results of observations. Most of the lesson time students were passive recipients which is not conducive to constructivist approach.

Parents Roles

The teachers, students, and administrators thought that the role of the parents was limited to only helping with homework of the students, bringing the students to the school, and purchasing their educational needs.

Therefore parents' roles in the LS lessons were not conducive to constructivist pedagogy.

Teaching Methods

The most frequently used teaching methods were

- Lecturing
- Question-answer
- Demonstration

Therefore the teaching methods used were not conducive to constructivist curriculum.

Instructional Materials

The most frequently used instructional materials were

- textbooks,
- workbooks,
- whiteboards.

Therefore the instructional materials used in LS lessons were not conducive to constructivist curriculum.

Assessment Methods

The most frequently used assessment methods were

- written and oral exams
- classroom observations
- self-assessment

some of the authentic assessments were rarely used in the LS lessons include

- peer-assessment
- group assessment

Therefore the assessment methods used in LS lessons were not conducive to constructivist curriculum.

CHAPTER V

CONCLUSIONS AND IMPLICATIONS

This chapter presents a discussion of and conclusions drawn from the study findings, followed by the implications of these findings for implementation of the LSC as well as for further research.

5.1. Conclusions

This section begins with a review of the Life Sciences Curriculum reform process, followed by a discussion of the general characteristics of the LSC. It concludes with a presentation and discussion of the findings of document analysis, stimulated recall interviews with teachers, semi-structured interviews with administrators, creative drama sessions with second- and third-grade students and classroom observations regarding their perceptions about the implementation of the current LSC. Included in the overall discussion is an analysis of whether or not the LSC as it is currently being implemented is conducive to the actualization of the specific recommendations offered by constructivism.

5.1.1. Life Sciences Curriculum Reform Process

In today's world, various new opportunities have emerged as a result of technological, economic and social developments. In order to take advantage of these new opportunities, individuals must be brought up to be capable of continually adapting to an ever-changing world by acquiring new knowledge**,** skills**,** experiences and achievements. Therefore, school curricula need to be restructured to assist individuals in developing creative and critical thinking skills, problem-solving skills, decision making skills, social awareness and competitiveness. Constructivism has had a great influence on education over the last 25 years (Jones

& Brader-Araje, 2002), and curriculum reform has emphasized a student-centred education rooted in the constructivist pedagogy in order to actualize emerging goals (Babadoğan & Olkun, 2006).

Following a detailed examination of the findings of national and international studies, educational specialists in Turkey agreed that curriculum reform would be a national priority (Şahin, 2009). Thus began a process of curriculum restructuring aimed at raising the quality of education in Turkish elementary and secondary schools, improving academic outcomes and closing the gap between Turkey and other OECD countries in terms of international achievement test outcomes (OECD, 2007).

In order to determine the general characteristics of the Turkish LSC, a document analysis was conducted that examined such items as reports of teacher committee meetings, teaching schedules, worksheets and lesson plans included in the teacher guidebooks. This analysis indicated that the current LSC curriculum was based on former curricula, which were adapted taking into consideration developments in the society and the needs and experiences of the country. In instituting the LSC reform, the main concern was to transform a subject-centred curriculum to a learner-centred one and a behaviourist pedagogical approach to a constructivist one (Akınoğlu, 2008; Babadoğan & Olkun, 2006; MONE, 2005; Sabancı & Şahin, 2005; Şahin, 2009).

5.1.2. Life Sciences Curriculum General Characteristics

Findings of the documents analysis indicate that the Life Sciences Curriculum focuses on constructivist recommendations such as student-centeredness, a thematic approach and active student participation (Figure 5.1).

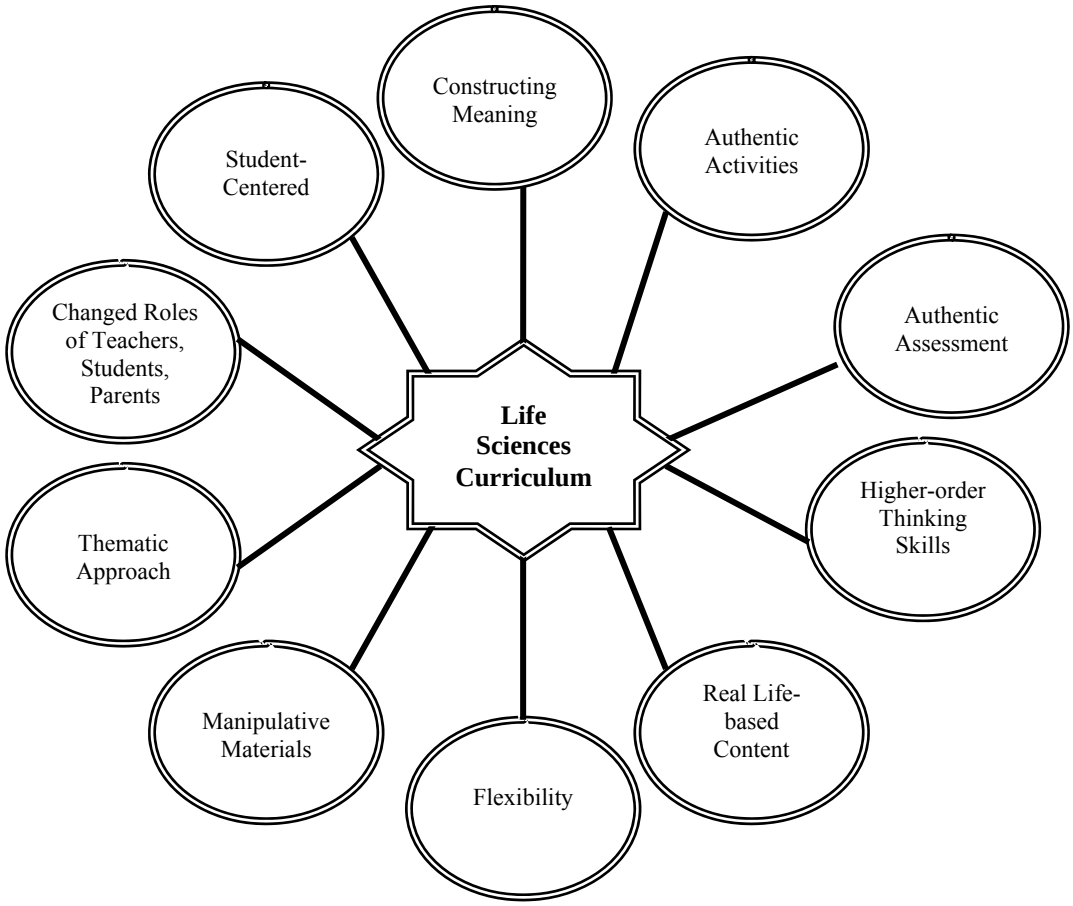


Figure 5.1. General Characteristics of the Life Sciences Curriculum

The new LSC's sensitivity to individual differences suggests that multiple intelligences theory and contemporary teaching-learning approaches were also taken into consideration. This finding is consistent with the conclusions of the Curriculum Review Commission (2005), which found that in addition to emphasizing a thematic approach and student-centred teaching, the LSC also focuses on developing skills like critical thinking, creative thinking and problem-solving. Previous research (Merter, 2005; Akınoğlu, 2008; Babadoğan and Olkun, 2006; Sabancı and Şahin, 2005; and Şahin, 2009) has asserted that the LSC has adopted a constructivist approach, which suggests student-centered instruction and the creation of a meaningful environment that promotes communication and collaboration among students (Gold, 2001).

The LSC guide can be considered a blueprint for action for teachers, administrators and supervisors, who can adjust the curriculum as necessary. The curriculum guide may also help parents and others better understand how they can

participate in their children's education The different possibilities for teaching-learning, measurement and evaluation activities included in the LSC also suggest that differences in conditions and facilities in different parts of Turkey were taken into consideration during the curriculum restructuring process (MEB, 2009).

Overall, the document analysis showed the LSC to employ an integrated curriculum, a model in which links are established among several subjects, such as humanities, communication arts, natural sciences, mathematics, social studies, music and art (Drake & Burns, 2004; Humphreys et al., 1981; Knobloch, 2002; Lake, 1998; Shoemaker, 1989). In the case of the LSC, links were established among the LSC, Kemalism and intermediate disciplines such as psychological counselling and guidance, sports culture and Olympic education, disaster prevention and personal safety, career awareness development, human rights and citizenship, health culture, entrepreneurship and special education. Moreover, the LSC is considered a pivotal course that provides students with the background skills and knowledge required for secondary education courses. Previous research (Güleryüz, 2008) has also viewed the LSC as an interdisciplinary course. Its use of an integrated approach to curriculum – a model that is in line with a constructivist perspective (Knobloch, 2002) – leads to the conclusion that the LSC is conducive to a constructivist pedagogical approach.

Within this integrated model, skill acquisition is arranged according to a thematic approach, with 'individual', 'community' and 'nature' identified as the three main areas of learning in the 2005 LSC. Moreover, changes were observed in each of these areas. The thematic approach has been viewed by many researchers (Aldal & Kalın-Falakaoğlu, 2006; Dağlı, 2008; Demir, 2007; Karaca, 2008; Köksalan, 2007; Merter, 2005) as one of the most positive characteristics of the new LSC, since this approach helps to eliminate the content overlap and repetition that existed in the previous subject-based curriculum (Altınyelken, 2010).

Furthermore, the results of this study demonstrated that the LSC attempted to adopt a student-centred approach by putting the student's needs, interests, and experiences at the centre of the curriculum (Akınoğlu, 2008; Babadoğan & Olkun, 2006). From a constructivist perspective, it is important to take the learner's background and culture into consideration during the teaching-learning process, as

these are the elements that enable learners to construct the knowledge and reality that they create, discover and attain as part of the learning process (Wertsch, 1997).

Although the LSC's recommended activities seem to contribute to a constructivist pedagogy, Küçükahmet (2005) has asserted that there are some problems with the activities as they appear in the teaching guide, namely, that there is a mismatch between activities and the intended skills and knowledge acquisition, and she suggested that this may be a result of a failure to consult curriculum development specialists, educational psychologists, education sociologists, educational philosophers and education economists during the course of program development. She also criticized the members of the commission that prepared the LSC for a lack of clarity in terms of curriculum philosophy and for the choice and sequencing of the LSC content. Similarly, Merter (2005) claimed that philosophical, social and cultural dimensions were not addressed during curriculum development. As other researchers (Wulf, 1984; Taba, 1962; Varış, 1996) have pointed out, it is important to take into consideration the opinions of teachers, students, parents, administrators, politicians and educationalists during the curriculum development process.

LSC Content

The LSC content appears rooted in children's sensory and emotional environments. It is possible that the LSC's inclusion of content that is meaningful to the learner is a result of the thematic and interdisciplinary approaches used during the content-selection process. Given that the constructivist view is said to present knowledge that is appropriate to the experiences of the learners (Jaworski, 1996; von Glaserfield, 1990), the selection of course content based on real-life issues suggests that the LSC curriculum is conducive to the basic philosophy of constructivist pedagogy.

The content of the Life Sciences textbooks appear to be organized so that easier topics come at the beginning, with the level of difficulty slowly increasing. Moreover, subjects that are related to the immediate environment of young children and are therefore more meaningful to them are also placed at the beginning of the lessons. Kılıç and Güven (2009) assert that the principle 'from near to far' was

taken into account in the LSC. It can thus be concluded that individual developmental levels were taken into account when establishing curriculum content. Such consideration of individual differences is in line with a constructivist approach.

Relationships among theme, learning area and unit appear to have been established during the selection and sequencing of course content. However, these relationships are not clearly explained in the curriculum guide, and as a result, teachers may have trouble understanding how the content should be implemented. Other authors (Küçükahmet, 2005; Paykoç, 2005) have also noted the ambiguous nature of the LSC. Moreover, the many disconnected elements demonstrate that the holistic approach mentioned at the beginning of the LSC was not successfully maintained. The most significant reason for this is a lack of reliance on basic research (Küçükahmet, 2005; Paykoç, 2005).

Document analysis also found that the curriculum design allows for flexibility in implementation, i.e. teachers are able to adjust the implementation of the curriculum according to the needs of their classrooms by, for example, producing new activities that are in line with the curriculum's underlying philosophy. This shows that the LSC emphasized a perspective of 'mutual adaptation'. Previous research (Berman & Mclaughlin, 1977; Lighthall & Allan, 1989) has stated that a flexible curriculum allows teachers to adapt to innovations and provides agreement between program developers and implementers.

LSC Skills and Knowledge Acquisition

An analysis of the curriculum guide indicated that the LSC focuses mainly on skills acquisition at the lowest level of Bloom's taxonomy, which classifies intellectual behaviour on a hierarchy from the most basic level of 'knowledge' to increasingly complex levels that include 'comprehension', 'application', 'analysis', 'synthesis' and 'evaluation' (Overbaugh & Schultz, 2008). However, if instructional activities are organized so that students are required only to recall and recognize facts, it seems unlikely that they will be able to develop higher-order skills such as critical thinking, analysis and problem-solving. Moreover, in line with the findings of Küçükahmet (2005), in presenting the expected skills and knowledge acquisition

of the LSC, the guide sometimes combines multiple expectations, so that the actual expectations are unclear. Turgul (2006) also pointed out the overlap in terms of learning area and skills and knowledge acquisition, which were also found to be low in relation to theme and grade level. Given that the curriculum does not adequately take into consideration the needs of learners and does not promote the development of higher order thinking skills, it can be concluded that the skills acquisitions envisaged by the LSC are not in line with constructivist pedagogy.

5.1.3. LSC Implementation

No matter how well-developed a curriculum is produced; it will not be successful if it is not properly implemented. Changing content and acquisitions is not enough to accomplish a curriculum restructuring if the implementation varies significantly from its theoretical aims and content, which is a distinct possibility.

The LSC curriculum development committee envisioned educating students to like learning; to be at peace with themselves and their social and natural environments; to know, preserve and develop their country, nation and themselves; to acquire the skills and basic information necessary for life; and to be happy individuals (MEB, 2005; Özdemir & Yıldız, 2008, 2009). However, classroom observations, stimulated recall interviews and creative drama sessions found that the teachers who implement the curriculum do not know how to achieve these goals. In general, they don't understand the relationships among themes, learning areas and units, and they don't understand how to integrate the LS course units and intermediate disciplines such as disaster training, entrepreneurship, human rights and citizenships, health culture and sport culture. Teachers also had difficulties understanding the recommendations of the curriculum guides. Moreover, stimulated recall interviews with teachers revealed that the guides' estimates regarding time to be devoted to the acquisition of specific skills and knowledge was inaccurate, with some requiring more time and others requiring less time.

The following section examines the degree to which the changes in the LSC have been successfully implemented by looking at a series of implementation elements, namely, the physical setting of the classroom; classroom climate; instructional processes; teaching materials; assessment methods; and the roles of

teachers, students and parents. As explained above, all information was gathered through document analysis, interviews, stimulated recall interviews, observations and creative drama sessions with teachers, students and administrators.

Physical Setting of the Classroom

Classroom seating arrangements have an influence on classroom climate in that they influence both teacher and student behaviour. Straight-row seating arrangements, while ideal for the instructional methods of whole-group lecture and independent seatwork, reinforce the teacher as the primary source of knowledge (Cusick, 1999). Whereas a straight-row layout emphasizes teacher-centeredness and whole-class teaching, the constructivist classroom relies on circle and small-group desk arrangements to emphasize student-centeredness and collaboration. Research has shown that in order for group work to be successful, classroom seating arrangements need to be changed from rows to circles (Hasting & Schwieso, 1995). However, classroom observations, stimulated recall interviews and creative drama sessions revealed that most LSC classrooms are arranged using traditional straight-row seating, which restricts the variety of instructional activities that can be implemented in the classroom. As Sabancı and Şahin (2005) note, individual desks and chairs are necessary for the successful implementation of group work used in constructivist classrooms.

According to stimulated recall interviews with teachers and semi-structured interviews with administrators, the use of traditional seating arrangements is dictated by class size and by double-shift and double-session education that requires two different teachers to share the same classroom facilities. The use of the same classroom by two different teachers with different grades in morning and afternoon sessions poses a particular problem, since teachers are less free to rearrange the classroom seating, because changes made for the afternoon shift may interfere with the seating of the morning shift and vice versa.

Classroom Climate

Observations revealed that most students had a sense of self-worth and were eager to learn. Teachers ensured that all students had the right to speak, share knowledge, and be respected, which, it can be argued, are illustrative of democratic classroom practices. Interpersonal relationships between teachers and students demonstrated care, trust and respect, as demonstrated through the sharing and communication of information between teachers and students. It can be concluded that the classroom climate created by the teachers was conducive to a constructivist approach. In spite of this, classroom observations and creative drama sessions showed that students had little opportunity to participate in decisionmaking processes in LS lessons. In stimulated recall interviews, teachers stated that they fear losing control of the class if they give students more responsibility for their learning.

Many researchers (Lester & Onore, 1990; McNeil, 1986; Dewey, 1916; Dewey and Bentley, 1949) maintain that acknowledging the significance of students' experiences in learning, using small group activities in instruction, allowing students to exchange ideas and opinions, giving them liability in decision making regarding learning; and focusing on the learning process rather than on outcomes represent democratic classroom characteristics. According to a study by Akdağ (2009), classroom climates in Turkey are not democratic.

Although the teachers in this study tried to provide opportunities for active participation by students, both teachers and administrators stated that it was difficult to ensure active participation in large classrooms. This is in line with a study by Iaria and Hubball (2008), who found that the rate of students who participated in class discussions in large classes was significantly lower than the rate in small classes, even though active discussion opportunities were provided in both. The authors claimed that students in crowded classes were less willing to engage in classroom interaction than students in small classes. In contrast, Kumar (1992) found that student interaction depends less on class size than on the nature of classroom activities and teacher roles and attitudes.

Instructional Processes

Document analysis revealed that LSC classroom activities were planned in a constructivist manner by taking individual differences into consideration in the teaching and learning process and leaving room for localization of activities. Moreover, instruction was not expected to be restricted to within the school walls; rather, all situations that students experience in their lives are viewed as opportunities for education, and school trips and visitors are considered an integral part of the Life Sciences lessons. Instruction that includes creative drama and group work would also be in line with the constructivist pedagogy on which the LSC appears to be based. In particular, some research advises teachers to embed creative drama activities into their instruction (Okvuran, 2005), since drama activities build on students' experiences and allow students to share their own perceptions, experiences and knowledge in their activities. In line with this suggestion, Işık (2008) found drama to be more effective than traditional teaching methods for teaching the topics included in the LSC.

However, the results of observations, stimulated recall interviews and creative drama sessions revealed that very few teachers actually use collaborative learning methods in the LS classroom. Instead, instruction is based largely on direct methods such as lecture, demonstration and question-answer, which are not conducive to the development of higher-order skills such as creative and critical thinking and problem-solving. Stimulated recall interviews suggested that teachers had difficulties in using collaborative teaching methods in their classrooms. Similarly, although stimulated recall interviews showed teachers perceive drama as a very useful way of teaching LS concepts, observations and creative drama sessions revealed they were unable to employ drama activities in their LS lessons. Even those teachers who were simply trying to embed real-life material in their lessons had difficulties, and their repertoire of instructional methods was observed to be limited to lecturing, demonstration and question-answer.

One important reason for teachers' difficulties in broadening their instructional activities may be that pre-service education does not promote collaborative learning. Instead of being trained to facilitate groups and/or utilize brainstorming methods, teacher candidates are trained to be good classroom

managers of orderly students who quietly listen to their lectures or work individually. This is in line with studies (Merter, 2005; Panitz, 1997; Richardson et al, 2008) that show many teachers do not know how or where to begin using novel instruction methods in their classrooms. In addition, Turkey's present national examination system forces teachers to teach a large amount of knowledge through teacher-centered methods. Not only does the system lead teachers to emphasize individual performance and memorization in their instruction, it also creates a high level of competition among students and encourages them to become rote learners.

Teaching Materials

Interactive classroom activities are considered to be ideal for addressing multiple learning styles, staying child-centered and reinforcing concepts with authentic activities. However, observations, stimulated recall interviews and creative drama sessions revealed that the main teaching materials used in the LS courses were textbooks, workbooks and white boards. Although the classrooms were equipped with televisions, video monitors, computers and projection equipment, teachers did not integrate these tools into their instruction, possibly because they were not sufficiently motivated to integrate new and unfamiliar teaching material into their instruction. As one earlier study has shown, renewing curriculum material requires large amounts of time and effort, whereas most teachers prefer to use the materials with which they are most familiar (Panitz, 1997). In fact, the use of textbooks stresses the role of the teacher; since it is teachers, who review textbooks, prepare the lesson and direct students' learning through textbooks (Lubben, Campbell, Kasanda, Kapenda, Gaoseb, & Kandjeo-Marenga, 2003).

Classroom observations showed activities still rely mainly on textbooks, not on interactive material (i.e. computers, projection equipment, videos) or material taken from real life (i.e. newspapers, experiences of adults).This finding is consistent with the literature that textbooks are a crucial element in shaping curricula and continue to remain the most important resource in and out of the classroom, despite an increase in technological equipment in schools (Uzuntiryaki

& Boz, 2006). However, reliance on a single textbook is said to conflict with a constructivist approach (Paykoç, 2005).

When tools such as Internet connections, projection equipment, televisions, VCDs and computers with the potential for interactivity are used in the classroom, they are used simply for demonstration purposes. In this sense, it can be argued that the use of interactive materials is not sufficient for achieving the LSC objectives in that they do not promote opportunities for active participation by students. As a result, instead of student-centred teaching, teacher-centred teaching remains dominant in the LS classroom.

Assessment Methods

Despite the LSC's expectations that teachers assess students on a daily basis using authentic assessment methods, Küçükahmet (2005) reported measurement and evaluation to be the weakest aspect of the LSC. This claim was supported by the results of observations, stimulated recall interviews and creative drama sessions, which showed that traditional assessment methods are still widely used by LSC teachers.

Reliance solely upon traditional assessment methods is unsuited to a student-centred constructivist approach (Brooks & Brooks, 1999; Duffy & Cunningham, 1996; Jonassen, 1992), since these methods are unable to adequately assess creativity, critical thinking, or reflection (Boud, Cohen & Sampson, 1999; Cowan, 1998, Gipps, 1999; Lewis & Johnson, 2002; Race, 1998).

Analysis of stimulated recall interviews suggests that many of the teachers were unacquainted with alternative assessment techniques or lacked the self-confidence needed to try alternative methods. Merter's (2005) study supports the finding that teachers do not know how to use the new assessment methods. Furthermore, stimulated recall interviews found teachers' perceptions of the new instructional activities varied, with some teachers considering the new teaching and assessment methods to be enjoyable and useful, whereas others thought the new methods to be impractical and a waste of academic learning time. While the former group were attempting to integrate the new methods into their teaching activities, the latter group was making no attempt to do so.

Roles of Teachers, Students and Parents

Definition of roles ensures that important requirements in the implementation of a curriculum are not disregarded. It also prevents conflicts in accomplishment of tasks assigned. In the new LSC, the expected roles of teachers, students and parents have changed remarkably. However interviews, stimulated recall interviews, classroom observations and creative drama sessions revealed a number of differences between the theoretically envisaged roles, the perceived roles and the actual roles of teachers, students and parents. Moreover, perceptions regarding roles differed, at times greatly, among teachers, students and administrators (Figure 5.2).

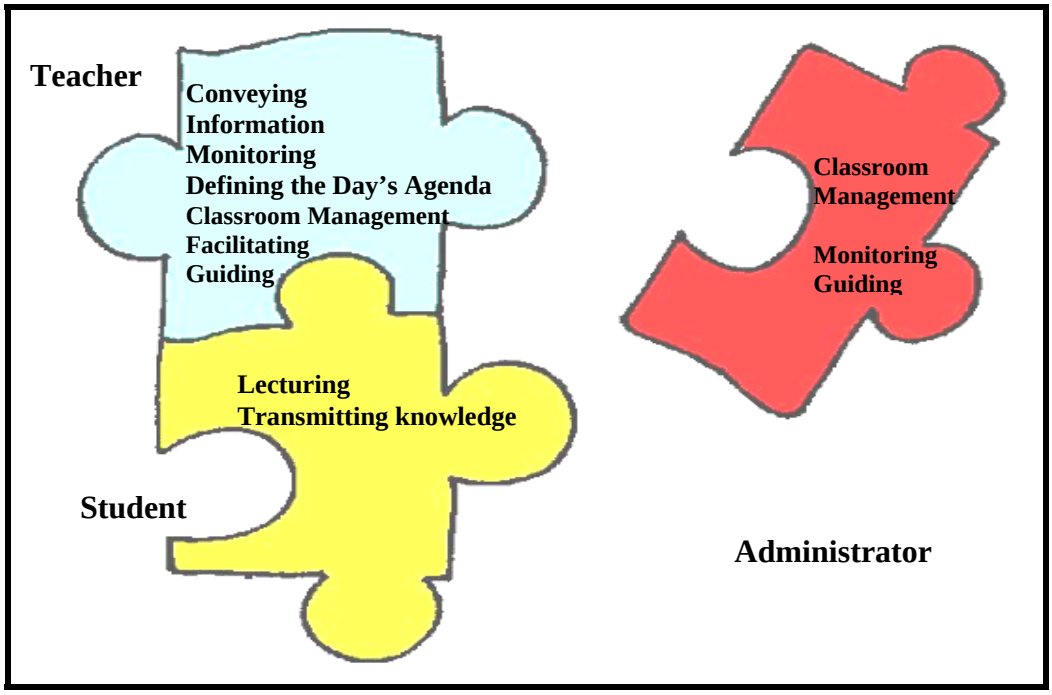


Figure 5.2. Perceived Role of the Teacher

Teachers' Roles

In constructivist classrooms, teachers are not expected to transmit information; rather, they are expected to support students in finding ways to access relevant information. According to Murchú (2005), meaningful learning appears when the role of the teacher is transformed from that of knowledge transmitter to facilitator and coach. However, as Figure 5.2 shows, teachers were unable to change

their role from a transmitter of knowledge to a guide of their students' knowledge-construction processes.

Resistance to change on the part of teachers may be due to worries that they will lose control of the class and be unable to cover the curriculum in the allotted time if they allocate more responsibility to students (Panitz, 1997). It is also possible that teachers lacked training in line with a constructivist approach.

Students' Roles

Rather than passively receiving information, the LSC expects students to take active roles such as asking questions, establishing and solving problems, conducting research and assessing their own work. As Figure 5.3 shows, teachers and administrators' opinions about student roles were very similar to those suggested by the current LSC. Students were expected to communicate and interact with teachers and peers, to assess their own learning, to reflect their opinions about the issues raised in the LSC and to conduct their own research to uncover information rather than waiting for lectures from their teachers. Similarly, the perceptions of third-grade students regarding their roles included investigating, examining, interpreting, finding solutions, learning from others and sharing what they learned (Figure 5.3). However, for second-grade students, perceived roles were limited to listening to teachers and peers, answering questions and doing homework, i.e., the students saw themselves as passive receivers of information provided by the teacher. It is possible that although second-grade students did not fully understand their roles, an increasing familiarity with the curriculum over time led third-grade students to change their perceptions so as to be more in line with a constructivist approach.

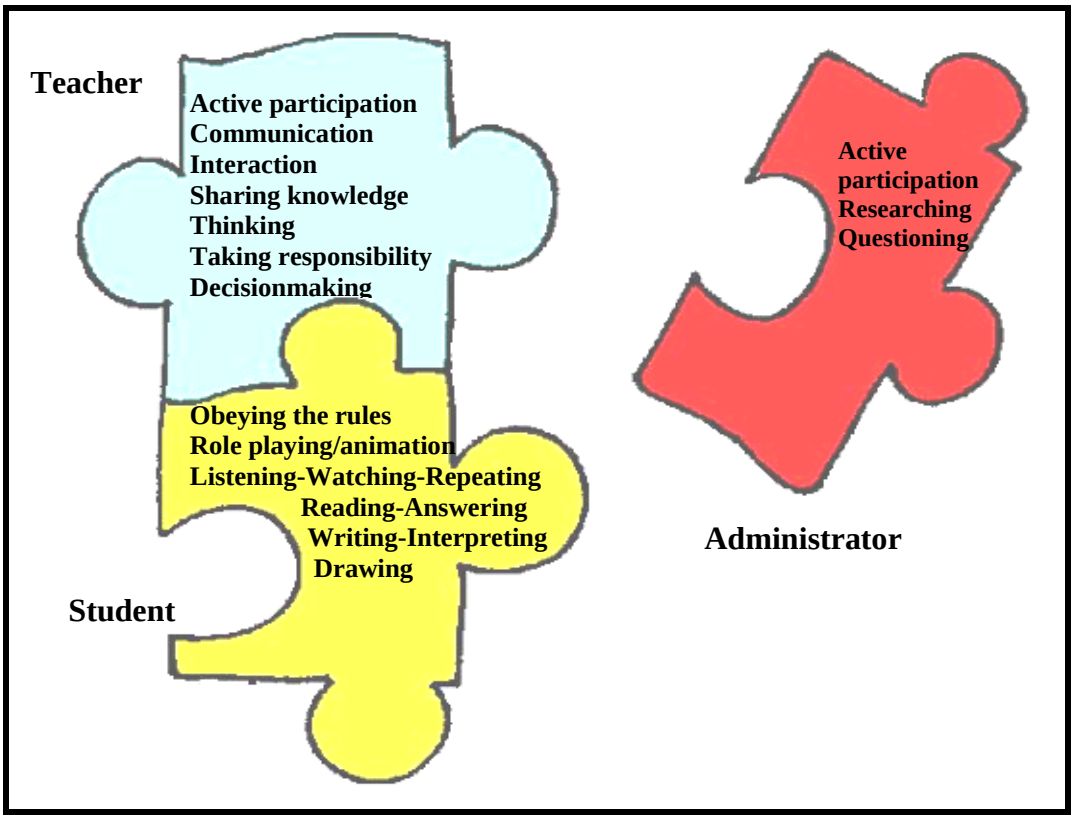


Figure 5.3. Perceived Roles of the Student

Murchú (2005) maintains that students become self-directed learners and critical thinkers when they are given opportunities to actively engage in activities that encourage critical thinking. Many other researchers (Davis, 2003; Hardy, Jonen, Möller, & Stern, 1998; Linn, 1995; Papert, 1981) confirm that in constructivist classrooms, learners are expected to actively participate in the knowledge-construction process, build links between newly acquired knowledge and existing concepts and work collaboratively.

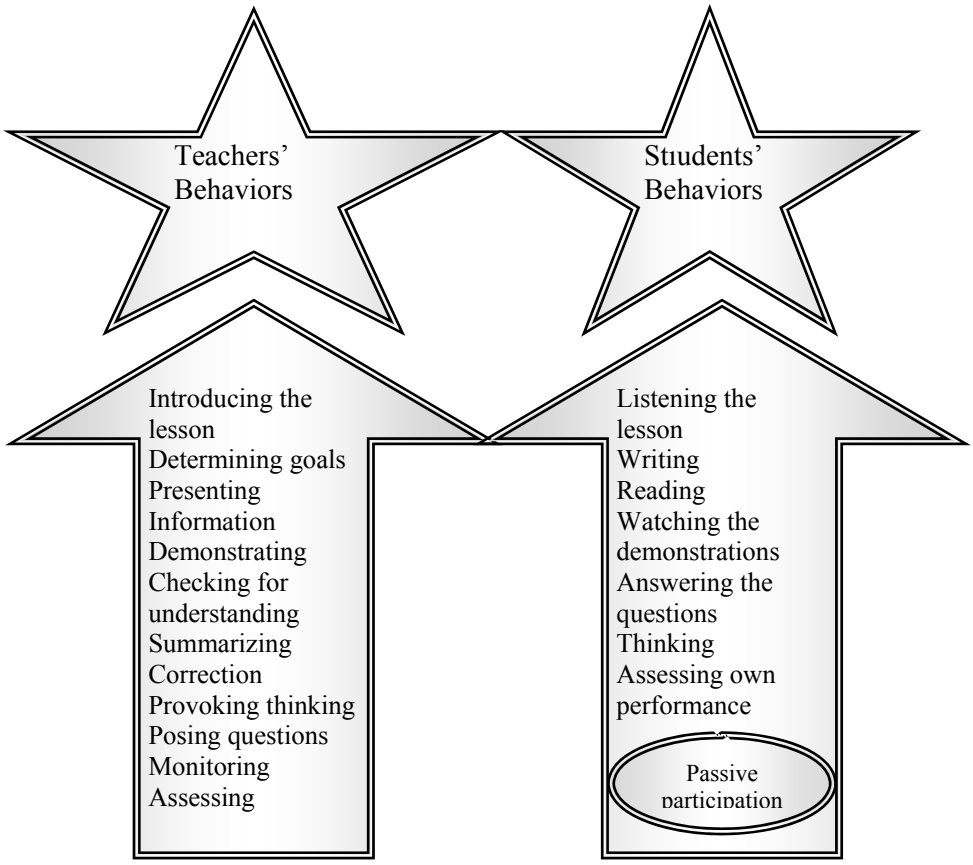


Figure 5.4. Teachers and student behaviour in the LSC

However, despite the fact that the perceptions of student roles were in line with the requirements of a constructivist approach, classroom observations and creative drama sessions revealed different sets of behaviours in reality (Figure 5.4). The main teaching method in the course was, in fact, the lecture, and student participation was limited. To be precise, students were observed to be sitting, listening to explanations, answering questions, or watching videos, slide shows or presentations by their peers. They were rarely allowed to generate their own questions or share relevant information of their own. Some students were obviously engaged in other activities such as staring out the window, browsing through books, looking for something in their bags, sharpening pencils, or throwing out trash, suggesting that the teaching method had failed to gain their attention. Studies (Feigelman, 2007; Yıldırım, Güneri, & Sümer, 2002) have shown that students in elementary grades are unable to sit at their desks for long periods of time, rather, they have short attention spans, require very energetic and demanding physical activity as well as peer approval and will engage in daring and adventurous

behavior. Thus, it is possible to argue that the student behaviour observed in the LSC classrooms was affected by the instruction method.

The Parents' Role

Although the LSC theoretically encourages active parent involvement, semi-structured interviews with administrators, stimulated recall interviews with teachers and creative drama sessions with students revealed that the perceived roles of parents were limited to helping students with homework, bringing students to school and providing for their education-related material needs (Figure 5.5).

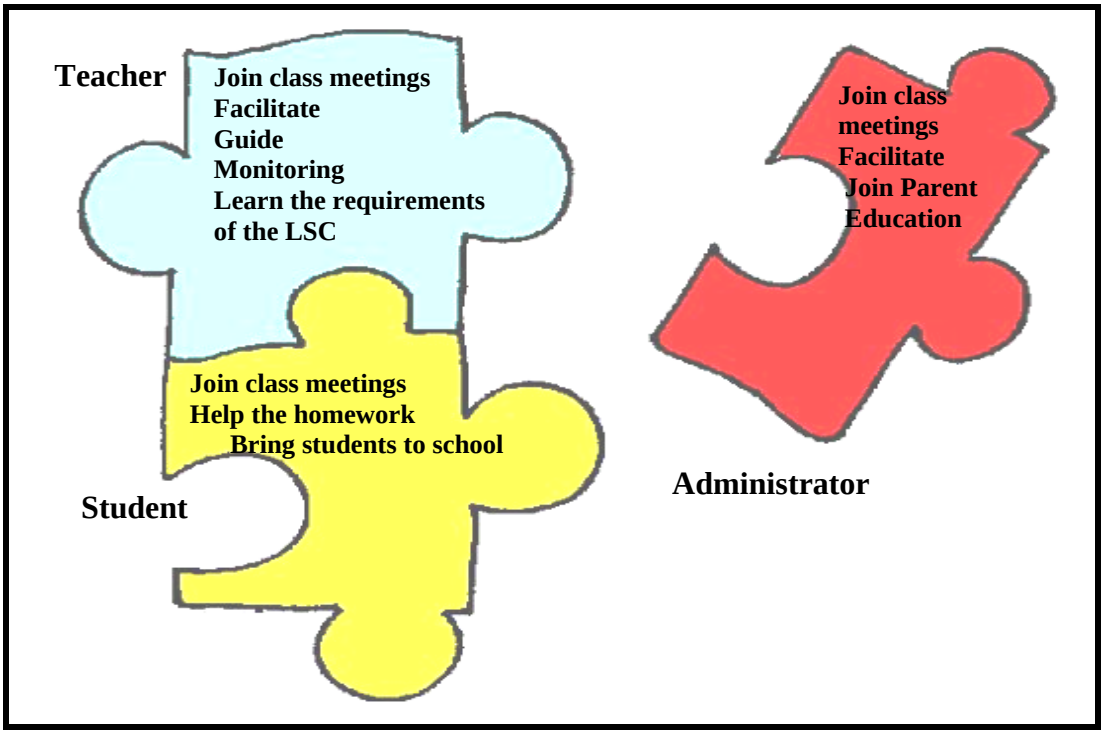


Figure 5.5. Perceived Role of the Parent

Many researchers maintain that homework has a positive influence on parent involvement in that it involves parents in the school process, enhances their appreciation of education and allows them to express positive attitudes (Acat & Can, 2008; Cooper, 2001; Epstein, Simon & Salinas, 1997; Harris & Valentine, 2001; Lee, 1994; Xu and Corno, 1998). Positive parental involvement in homework has also been found to be a strong predictor of student achievement (Cooper, Jackson, Nye, & Lindsay, 2001). However, stimulated recall interviews with

teachers revealed that parents misunderstood their roles to include doing homework rather than guiding or facilitating their children in completing it themselves, and as a result, it was the parents who completed the homework, not the students.

It may be argued that such parental behavior prevents students from actively participating in and taking responsibility for their own learning, which are key elements in a constructivist approach (Glasersfeld, 1989**;** Kanuka & Anderson, 1999; Şentürk, 2009). The manner in which parents provided help with life science homework is clearly not conducive to a constructivist approach, which, according to Akpınar (2010), requires parents to be stripped of their former roles, i.e. doing their children's homework and providing direct yes-or-no answers to their children's questions. In line with this assertion, Smith (2000) and Warton (2001) found that while students are able to make important contributions to the process of doing homework, they are often excluded, and feel unauthorized as a result (Smith, 2000; Warton, 2001). Moreover, stimulated recall and interview results showed that parents sometimes felt inadequate when they were unable to help their children with homework. It can be concluded that some parents avoid participating in their children's education because they feel obliged to provide support with homework that they feel unqualified to provide. Additionally, document analysis showed that negative experiences when they were students prevented parents from participating in their children's instructional activities (MONE, 2005).

Parental behaviour and perceptions suggest that they are unfamiliar with the LSC curriculum requirements and how to participate appropriately in their children's education. This may be related to child-rearing practices in Turkey. Specifically, research has shown that parents believe doing homework can limit children's engagement in leisure-time activities (Babadoğan, 1990; Cooper, 2001); therefore, it is possible that parents believe completing their children's homework may allow their children more time to play. On the other hand, parents have high aspirations for their children and may believe that it is necessary to help them in this way so that they can get ahead of other students.

5.2. Implications

5.2.1. Implications for Practice

Whereas document analysis showed the LSC to have been restructured in line with a constructivist approach, stimulated recall interviews, structured interviews, creative drama sessions and classroom observations revealed certain problems in the implementation of the new curriculum. Specifically, classroom setting, instructional materials, teaching techniques and assessment methods were not found to be conducive to a constructivist approach. There are several possible reasons for this, including a lack of knowledge of teaching methods and authentic assessment methods on the part of teachers; a lack of preparedness for the new curriculum on the part of stakeholders (i.e. teachers, students, administrators and parents); and a lack of classroom space. Based on these findings, a number of suggestions can be offered to MONE policymakers and school practitioners in order to close the gap between the reformed LSC curriculum and its actual implementation.

First, teachers need to be provided with in-service training and support programs to enable them to successfully make use of appropriate teaching and assessment methodologies. In order to encourage teachers to employ these techniques, in-service training can be organized around the principles that underlie the new methods. For example, teachers were aware of the benefits of group work and creative drama as instruction techniques, but they lacked the ability to put these techniques into practice in the LSC classroom. Therefore, in-service education can provide instruction in good practices related to the use of collaborative activities and creative drama. Providing such examples may prompt teachers to enhance their instructional repertoire with interactive materials and instruction methods such as hands-on activities and pair work to compensate for the negative effects of crowded classrooms that inhibit active student participation. However, this would also require moving away from fixed-seating classroom infrastructure that cannot be rearranged to accommodate small group work. Moreover, in-service training needs to address the issue of assessment, which was perceived as one of the most problematic aspects of the LSC. Teacher guidebooks may also include more detailed information about the use of rubrics and other authentic assessment

methods. Finally, in-service training should support teachers in becoming technologically literate so that they are able to incorporate technology and interactive material into LSC lessons. In this regard, schools need to be equipped with up-to-date and adequately maintained technological hardware and software. By providing more effective programs that address teachers' needs in this manner, they may be more likely to participate in in-service training activities.

Another issue that needs to be addressed is the role of parent involvement in education. Stimulated recall and structured interviews revealed minimal parental involvement in the school's parent education program. In order to increase parent involvement, administrators and teachers need to understand why parents are reluctant to participate so that the necessary steps can be taken to address these issues. By showing respect for parent contributions and helping parents to understand the philosophy and requirements of the curriculum, teachers and administrators may encourage parents to become more appropriately involved in their children's education. Teacher outreach may take the form of a letter to parents describing the aim of homework and asking how and in what areas parents would like to contribute, as well as weekly progress reports that ask for a parent's opinion when a child is having trouble or is getting poor grades.

5.2.2. Implications for Further Research

The findings of this process evaluation study may help curriculum specialists identify what worked and what didn't in the implementation of the LSC curriculum. Further curriculum evaluation studies may be conducted during any phase of the curriculum development process so as to gather as much data as possible regarding the implementation of this relatively new curriculum.

This study provides qualitative data gathered from individual stakeholders at one school in the Keciören district of Ankara and represents the individual perspectives of the study participants. Future studies may employ both qualitative and quantitative measures to define perceptions and attitudes of stakeholders at other schools. At the same time, qualitative studies similar to the one reported on here should be replicated at primary schools with student populations of different socio-economic status, and comparative studies should be conducted with public

and private and/or rural and urban school participants in order to identify the effects of socio-economic and cultural background on the implementation of constructivist curricula in general and to provide insight into the implementation of the reformed LSC curriculum in different regions in Turkey in particular. In addition, in view of the increasing importance being placed on the use of technological developments such as the Internet in the classroom setting, research may also be conducted in schools that make good use of technology in the classroom to determine its effects on student participation in the LSC.

This qualitative study represents an initial attempt to identify the opinions of teachers, students and administrators on the changed LSC curriculum. The findings are clustered around primary themes, namely, general characteristics of the LSC; implementation of the LSC; teachers and administrators as implementation elements; perceived roles of teachers, students and parents in curriculum implementation; classroom teaching methods; instructional materials; assessment techniques; and the consistency between implementation and specific recommendations suggested by constructivism. Future studies should consider the effects of other characteristics such as cultural background, interest groups and socio-economic environment on curriculum implementation in order to develop ideas for improving implementation. In addition, whereas this study focused primarily on teachers, future studies should be designed to more fully address parents' perceptions and opinions regarding parental involvement in the new curricula.

Finally, several issues arose in this study with regard to methodology and participants that may be relevant for future research. In terms of methodology, this study represents the first occasion in which the researcher made use of stimulated recall interviews and creative drama for data collection. Stimulated recall interviews enabled the researcher to observe the internal thought processes in which teachers engaged as they were teaching in the same manner as externally visible real-world events. The use of creative drama, on the other hand, enabled even young children to contribute to research as informants. Whereas conducting research with children is known to entail certain difficulties, by engaging them in creative drama activities, children became more relaxed and were able to express themselves more freely. It is hoped that the reader will gain some sense of how stimulated recall interviews and

creative drama sessions may be used as data-collection tools and that this subject itself may become an avenue for further study.

In terms of participants, this study was based on voluntary participation; however, unfortunately, none of the male teachers at the school in which the study was conducted agreed to participate. As a result, data from stimulated recall interviews and classroom observations were collected only from female teachers and their classrooms. Previous studies have suggested that males and females are attracted to different types of studies (Signorella & Vegega, 1984; Tannen, 2002; Whitley & Wiederman, 2002), with males more likely to volunteer for studies on topics perceived as masculine, such as power and competition, and females more likely to volunteer for studies on topics perceived as feminine, such as sharing feelings and moods (Signorella & Vegega, 1984). Further studies that include both male and female teachers' perceptions of the LSC and provide comparisons between the two groups are therefore required.

It should also be noted that the researcher was employed for a significant length of time at the school in which the study was conducted, and that her familiarity with the setting may represent a limitation in that it may have desensitized her to some of the details of the environment. In order to generate more reliable and generalizable results, further studies should be conducted with research teams rather than individual researchers.

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APPENDIX A

SCHOOL ADMINISTRATOR INTERVIEW SCHEDULE

Tarih/ Başlangıç –Bitiş Saati

Yer:

Görüşmeci: P. Oya TANERİ

GIRIŞ

Hayat Bilgisi Dersinin işlenişi hakkında görüşlerinizi almak istiyorum. Sizinle yapacağımız görüşmeler, Hayat Bilgisi Dersinin nasıl işlendiğinin okul yöneticilerinin bakış açısından ortaya çıkarmada çok yararlı olacaktır. Bu görüşmelerde isminiz kullanılmayacağından ve elde edilen verilerin bilimsel amaçlar dışında kullanılmayacağından emin olabilirsiniz.

Bu araştırmada yer almak tamamen sizin isteğinize bağlıdır. Araştırmada yer almayı reddedebilirsiniz veya herhangi bir aşamada araştırmadan ayrılabilirsiniz; bu durum herhangi bir cezaya veya sizin yararlarınıza engel duruma yol açmayacaktır.

Görüşmemiz yaklaşık olarak 30 dakika sürecektir.

- Herhangi bir sorunuz var mı?
- Görüşmenin ses kaydını almak istiyorum sizin için sakıncası var mı?
- Vereceğiniz cevaplar için şimdiden teşekkür ederim.

Kişisel Bilgiler

1. Hangi bölümden ve ne zaman mezun oldunuz?
2. Kaç yıldır yöneticilik yapıyorsunuz?
3. Kaç yıldır bu okulda yöneticilik yapıyorsunuz?

4. Yenilenen Hayat Bilgisi Programı ile ilgili bir hizmet içi eğitim aldınız mı? Ne zaman? Nerede? Ne kadar sürdü?

5. Önceki programda Hayat Bilgisi dersi okuttun öğretmenleriniz oldu mu? İki program arasında fark görüyor musunuz? Neler?

İçerik ve Süreç

1. Sizce Hayat Bilgisi dersinde en çok hangi öğretim yöntemlerini kullanıyor?

Hatırlatıcı:

- Grup çalışması
- Düz anlatım
- Drama
- Monolog
- Tartışma
- Soru-cevap
- Sunum
- Diğer

2. Okulunuzdaki öğretmenler Hayat Bilgisi dersinde kullanılacak öğretim yöntemlerini seçerken nelere dikkat ederler?

3. Okulunuzdaki öğretmenler Hayat Bilgisi dersinde öğretim yöntemlerini seçerken sorun yaşarlar mı? Ne tür sorunlar?

4. Sizce Hayat Bilgisi dersinde öğrencilerin eleştirel ve yaratıcı düşünme becerileri geliştirilebilir mi? Nasıl? Hangi öğretim yöntemiyle?

5. Sizce öğrenciler Hayat Bilgisi dersindeki ne tür etkinliklerden çok hoşlanırlar?

- Öğrencilerin hoşlandığı etkinliklere örnek verir misiniz?

6. Sizce öğrenciler Hayat Bilgisi dersindeki ne tür etkinliklerden hiç hoşlanmazlar?

- Öğrencilerin hoşlanmadığı etkinliklere örnek verir misiniz?

7. İşbirliğine dayalı öğretim yöntemi (grup çalışması) hakkındaki düşünceleriniz nelerdir?

8. Hayat Bilgisi dersinde en çok hangi ölçme değerlendirme tekniklerini kullanıyor?

Hatırlatıcı:

- Yazılı Sınav
- Sözlü Sınav
- Performans değerlendirme
- Akran değerlendirme

- Proje
- Gözlem
- Ürün seçki dosyası
- Diğer

9. Sizce öğretmenler Hayat Bilgisi dersinde ölçme değerlendirme tekniklerini seçerken nelere dikkat ederler?

10. Sizce öğretmenler Hayat Bilgisi dersinde ölçme değerlendirme tekniklerini seçerken sorun yaşarlar mı? Ne tür sorunlar?

11. Performans değerlendirme hakkındaki düşünceleriniz nelerdir?

12. Hayat Bilgisi kitaplarında yer alan etkinlikler hakkındaki düşünceleriniz nelerdir?

APPENDIX B

TEACHER STIMULATED RECALL INTERVIEW SCHEDULE

ENTRY QUESTIONS

Tarih/ Başlangıç –Bitiş Saati

Yer:

Görüşmeci: P. Oya TANERİ

GIRIŞ

Merhaba ben P. Oya TANERİ, ODTÜ EBB Eğitimde Program Geliştirme ve Öğretim ABD'da doktora öğrencisiyim. Hayat Bilgisi Dersinin işlenişi hakkında görüşlerinizi almak istiyorum. Sizinle yapacağımız görüşmeler, Hayat Bilgisi Dersinin nasıl işlendiğini öğretmen bakış açısından ortaya çıkarmada çok yararlı olacaktır. Bu görüşmelerde isminiz kullanılmayacağından ve elde edilen verilerin bilimsel amaçlar dışında kullanılmayacağından emin olabilirsiniz.

Bu araştırmada yer almak tamamen sizin isteğinize bağlıdır. Araştırmada yer almayı reddedebilirsiniz veya herhangi bir aşamada araştırmadan ayrılabilirsiniz; bu durum herhangi bir cezaya veya sizin yararlarınıza engel duruma yol açmayacaktır.

Görüşmemiz yaklaşık olarak 30 dakika sürecektir.

- Herhangi bir sorunuz var mı?
- Görüşmenin ses kaydını almak istiyorum sizin için sakıncası var mı? Vereceğiniz cevaplar için şimdiden teşekkür ederim.

Kişisel Bilgiler

1. Hangi bölümden ve ne zaman mezun oldunuz?
2. Kaç yıldır öğretmenlik yapıyorsunuz?
3. Kaç yıldır bu okulda öğretmenlik yapıyorsunuz?
4. Yenilenen Hayat Bilgisi Programı ile ilgili bir hizmet içi eğitim aldınız mı? Ne zaman? Nerede? Ne kadar sürdü?
5. Önceki programda Hayat Bilgisi dersi okuttunuz mu? İki program arasında fark görüyor musunuz? Neler?

İçerik ve Süreç

1. Hayat Bilgisi dersinde en çok hangi öğretim yöntemlerini kullanıyorsunuz?

Hatırlatıcı:

- Grup çalışması
- Düz anlatım
- Drama
- Monolog
- Tartışma
- Soru-cevap
- Sunum
- Diğer

2. Hayat Bilgisi dersinde öğretim yöntemlerini seçerken nelere dikkat edersiniz?

3. Hayat Bilgisi dersinde öğretim yöntemlerini seçerken sorun yaşar mısınız? Ne tür sorunlar?

4. Sizce Hayat Bilgisi dersinde öğrencilerin eleştirel ve yaratıcı düşünme becerileri geliştirilebilir mi? Nasıl? Hangi öğretim yöntemiyle?

5. Öğrencileriniz Hayat Bilgisi dersindeki ne tür etkinliklerden çok hoşlanırlar?

- Öğrencilerinizin hoşlandığı etkinliklere örnek verir misiniz?

6. Öğrencileriniz Hayat Bilgisi dersindeki ne tür etkinliklerden hiç hoşlanmazlar?

- Öğrencilerinizin hoşlanmadığı etkinliklere örnek verir misiniz?

7. İşbirliğine dayalı öğretim yöntemi (grup çalışması) hakkındaki düşünceleriniz nelerdir?

8. Hayat Bilgisi dersinde en çok hangi ölçme değerlendirme tekniklerini kullanıyorsunuz?

Hatırlatıcı:

- Yazılı Sınav
- Sözlü Sınav
- Performans değerlendirme
- Akran değerlendirme
- Proje
- Gözlem
- Ürün seçki dosyası
- Diğer

9. Hayat Bilgisi dersinde ölçme değerlendirme tekniklerini seçerken nelere dikkat edersiniz?

10. Hayat Bilgisi dersinde ölçme değerlendirme tekniklerini seçerken sorun yaşar mısınız? Ne tür sorunlar?

11. Performans değerlendirme hakkındaki düşünceleriniz nelerdir?

12. Hayat Bilgisi kitaplarında yer alan etkinlikler hakkındaki düşünceleriniz nelerdir?

APPENDIX C

OBSERVATION CHECKLIST

The elements of constructivist teaching	***Always***	***Sometimes***	***Never***	***Observer comments***
Lesson is student-centered.				
Students actively participate in lesson.				
Students play a larger role in judging their own progress.				
The teacher gives enough time for students' response.				
Students primarily work in groups.				
Pursuit of student questions is highly valued.				
Learning environments link newly learned subjects to other domains.				
Curriculum is presented whole to part with emphasis on the big concept.(top - down)				
The teacher asks open ended questions for comprehension.				
Curricular activities rely heavily on primary sources.				
Students are actively trying to construct meaning.				
Students are viewed as thinkers with emerging theories about the world.				
Teachers generally behave in an interactive manner mediating the environment for students.				
Teachers seek the student's point of view in order to understand student learning for use in subsequent conceptions.				
Assessment of student learning is interwoven with teaching and occurs through teacher observation of students at work and through exhibitions and portfolios.				

Adapted from Brooks & Brooks (1993).

APPENDIX D

CREATIVE DRAMA SESSION PLAN

Konu: Hayat Bilgisi dersi.

Amaç: Hayat Bilgisi dersinin işlenişi hakkındaki görüşlerini paylaşabilme.

Davranışlar:

1. Öğretmenin rollerini söyleme.
2. Öğrencinin rollerini söyleme.
3. Velinin rollerini söyleme.
4. Hayat Bilgisi dersinde kullanılan öğretim yöntem ve tekniklerini söyleme.
5. Hayat Bilgisi dersinde kullanılan araç-gereçleri söyleme.
6. Hayat Bilgisi dersinde değerlendirmenin nasıl yapıldığını söyleme.

Araç-gereçler: Top, kalem, kağıt, boya kalemi, bant, post-it, Öğrenci, Öğretmen ve veli yazan kağıtlardan 3'er tane. Kalp, soru işareti ve çöp kutusundan 3'er tane çıktı al.

Giriş Etkinlikleri:

1. Öğrencilerden müzik eşliğinde kapıya, camlara, duvarlara bedenlerini kullanarak Hayat yazmalarını isteme. (burnunla yaz, kulağınla yaz…)
2. "Bilgisi" kelimesi için aynı etkinliği yapma. Sonra Hayat Bilgisi yazma.
3. duvarda asılı kağıtlara Hayat Bilgisi dersinde öğretmen öğrenci ve velinin görevleriyle ilgili aklına gelenleri yazmasını isteme.

Öğretmen	Öğrenci	Veli

4. Çember olup Hayat Bilgisi dersiyle ilgili kelimeleri söyleyerek topu birbirine atma.

Geliştirme Etkinlikleri:

1. Müzik eşliğinde yürürken Hayat Bilgisi dersinde kullanılan araç-gereçleri düşünmelerini iste. Durdukları anda en yakın kişiler 2 li gruplar olsun. Ve o araç gibi dursunlar. Sonra her gruba tek tek hangi araç olduklarını sor.
2. Öğrencileri 3 gruba ayırdık. Her gruba bir kağıt ve boya kalemleri verdik. Hayat Bilgisi dersinde kullanılan araç-gereçlerin resimlerini yapmalarını iste. Sonra gruplar kağıtlarını değiştirsin. Her gruptan bir sözcü gördüğü resimlerin neler olduğunu söylesin.
3. Mektup yazma: Uzak ülkelerde yaşayan bir arkadaşınıza mektup yazıyorsunuz. Size Hayat Bilgisi dersini nasıl işlediğinizi sordu. Öğretmeniniz dersi nasıl anlatıyor? Sen derslerde konuşuyor musun? Nasıl ödevler hazırlıyorsun? Öğretmenin sana nasıl not veriyor? Anlatmanı istedi. Şimdi mektubu yazar mısın?
4. Hayat bilgisi dersinin en güzel yanlarını kalbin içine, en sevmediğin yanlarını çöpün içine yaz.

Değerlendirme:

1. Mektupları, resimleri incelemelerini iste. Aynı ya da farklı düşündükleri var mı?
2. Bütün çalışma üzerine sınıfça tartışma. Neden yaptık bu çalışmayı? Neleri fark ettik?

APPENDIX E

CODING LIST

- Constructivist Characteristics of the Curriculum
  - Elements of the Curriculum
    - acquisitions
    - concepts
    - knowledge
    - skills
    - attitudes
    - actions
    - themes
    - Aims to Develop
      - open-minded
      - balanced
      - reflective
      - risk takers
      - thinkers
      - principled
      - inquiring
      - knowledgeable
      - active
      - compassionate
      - lifelong learner
      - critical thinker
      - cooperation
      - meta-cognition
      - intercultural understanding
      - respect
      - Appreciating and Valuing Diversity
      - Recognizing differences
        - reading level
        - athletic ability
        - cultural background
        - personality
        - religious
        - beliefs
    - Content
      - Teaching-Learning methods
        - Teaching Activities
          - textbook based
          - real-life experiences
        - Teaching Strategies
          - direct instruction

- lecture
- question-answer
- demonstration
- cooperative learning
    - group work
        - identification of appropriate groups
        - task distribution
- drama / role play
- whole class teaching

- Teaching Materials
    - whiteboard
    - pen/pencil
    - textbook
    - workbook
    - notebook
    - encyclopedia
    - toys
    - newspapers
    - scissors
    - glue
    - CD/VCD
    - computer
        - Internet
        - power point presentation
        - projection Equipment

- Roles
    - Teachers
        - givers of knowledge
        - guide/ facilitator
        - planner
        - scaffold the students
        - active listener
        - couch
            - provide feedback (to the students to enhance, maintain or improve their performance)
            - observe performances
            - share knowledge and expertise
            - provides encouragement to assist students in reaching continuously higher levels of performance
            - enables students to develop their thinking and actions in response to differing situations
            - encourages learning, growth and teamwork all at the same time
            - enable individuals and groups of individuals (teams) to broaden, develop and motivate each other to achieve improvement in their performance
    - Students
        - active participant

        - recipient
        - construct the knowledge
        - engage in the lesson
        - learn from and with others
        - share own knowledge
        - social interaction
        - communicate
    - Parents
        - engage in teaching
        - support the student
        - attend the school meeting
- Assessment
    - Alternative
        - authentic
        - performance/ Projects
        - exhibition / dissemination of students work
        - presentation (oral/written)
        - peer assessment
        - self-assessment
            - filling out self-evaluation forms
            - journalizing
            - taking tests
    - Traditional
        - written exam
        - oral exam
        - observation
        - multiple choice test
- Elements of Implementation
    - The Classroom Climate
        - conducive to learning
        - each student feels valued and respected
        - never tolerate bullying, teasing, and other put-down behavior at any time in the classroom
    - Seating Arrangement
        - traditional
    - Democratic Atmosphere
        - teacher listen students
        - students listen each other
        - each student has the right to speak
        - rounds (giving turns to individual students to talk)
        - students participate decision making
    - Interaction
        - from student to teacher
        - from teacher to student
        - from student to student
    - Pleasure of stakeholders
        - administrators
        - teachers
        - students

APPENDIX F

AN EXAMPLE OF CODED/LABELLED INTERVIEW SCRIPT

Time (Start-Stop): 13.25-13.47	**Date:** 18. 12.2009/ Friday
Place: Pleiades Primary School	
INTERVIEW & NOTES	COMMENTS & CODES
Görüşme 18 Aralık 2009 Cuma günü, saat 13.25'de müdür yardımcısı odasında başladı. Görüşme öncesinde görüşmenin kayda alınmasını bir sakıncası olup olmadığı soruldu.	
R: Hangi bölümden ve ne zaman mezun olduğunuzu öğrenebilir miyim? I3: 19 Mayıs Üniversitesi Eğitim Tarih öğretmenliği bölümünden 2000 yılında mezun oldum.	
R: Kaç yıldır yöneticilik yapıyorsunuz? I3: 4 yıl buradan var; 1 yıl 1,5 yıl da… 5,5 yıl, 6 yıldır. Hemen hemen yaklaşık 6 yıldır yöneticilik yapıyorum.	*-tenure*
R: Bu okulda kaç yıldır çalışıyorsunuz? I3: 4 yıldır buradayım. Tam 4 yıl oldu.	
R: Yenilenen programlarla ilgili herhangi bir hizmet içi eğitim aldınız mı? I3: Aldım. Sosyal Bilgilerle ilgili, yani branşım sosyal bilgiler olduğu için program eğitimi aldım, evet.	*-in-service training*
R: Bu eğitimden biraz söz edebilir misiniz? I3: Ama eğitimin çok başarılı olduğunu zannetmiyorum yani. Ee bizim gibi bir sosyal bilgiler öğretmenini oraya çıkarmışlar. Müfredatla ilgili, içerikle ilgili, bize kısaca yapılması gerekenlerle ilgili bilgi verdiler. Ama hani çok sağlıklı değildi. Bir hafta gittik yaklaşık. Çok sağlıklı, çok da iyi bir eğitim aldığımızı düşünmüyorum.	*--dissatisfaction with training* *-curriculum* *-content* *-IC: He didn't like the seminar* *-content of the seminar*
R: Nelerden bahsedildi? Konular nelerdi? I3: İşte, öğretmen merkezli değil de öğrenci merkezli eğitim olmasını, işte performans, proje ödevlerine dayalı çalışmalar yapılmasını, görsel materyallere daha çok önem verilmesi gerektiğini… Aslında iyi bir şey de ee eğitim tam amacına ulaşmadı bence yani.	*-teacher-centered* *-learner-centered* *-performance* *-project* *-visual materials* *- education did not reach the aim*

APPENDIX G

AN EXAMPLE OF CODED/LABELLED STIMULATED RECALL INTERVIEW SCRIPT

Time (Start-Stop): 13.00-13.30	**Date:** 14. 01.2010/ Thursday
Place: Pleiades Primary School-Information Technology Classroom	
INTERVIEW & NOTES	COMMENTS & CODES
Görüşme 14 Ocak 2010 Perşembe günü, saat 13.00'de Bilişim Teknolojileri sınıfında başladı. Katılımcıya sınıfta yapılan gözlemin birlikte izleneceği belirtildi. İzlerken aklına gelenleri istediği anda filmi durdurarak ya da durdurmadan "sesli düşünerek" açıklaması istendi. Görüşme öncesinde görüşmenin kayda alınmasının bir sakıncası olup olmadığı soruldu.	*IC [*]:The teacher was eager to talk*
R: İlk sorumdan başlayım.	
I5: Tamam, oldu.	
R: Hangi bölümden ve ne zaman mezun olduğunuzu öğrenebilir miyim?	*-alternative education teacher*
I5: Ben 1985 yılında Gazi Üniversitesi İletişim Fakültesi Gazetecilik bölümünden mezun oldum.	
(Video açık olduğu için katılımcının sesi zor duyuluyordu).	
R: Formasyon eğitimi aldınız mı? Nereden? Ne kadar sürdü?	*-Teacher profession formation*
I5: Evet. MEB'den aldım. Bir ay sürdü.	
R: Bu okulda kaç yıldır çalışıyorsunuz?	*-tenure*
I5: Bu okulda 7. yılım. 13 yıldır meslekteyim. Mayıs'ta 13 yıl olacak. 7 yıldır da bu okuldayım.	*-in-service training*
R: Peki Hayat Bilgisi Programıyla ilgili ya da genel olarak yenilenen programla ilgili hizmet içi eğitim aldınız mı?	
I5: Programla ilgili şöyle ilk program çıktığı zaman, seminer döneminde, haziran döneminde iki haftalık bir seminer aldık.	*-content of the seminar*
R: Semineri hatırlıyor musunuz? İçerik nasıldı? Faydası oldu mu?	*-dissatisfaction with training*

[*] IC: Interviewer's comment

APPENDIX H

AN EXAMPLE OF CODED OBSERVATION SCHEDULE

<table>
<tr><td>Time (Start-Stop): 13.00-13.30</td><td>Date:
14.12.2009/</td></tr>
<tr><td>Place: Pleiades Primary School</td><td>Class: 2</td></tr>
<tr><td>Çekim Saat 13. 05’te başladı.
Sınıfta 40’a yakın öğrenci vardı. Ben sınıfa girdiğimde ayağa kalktılar ve ben oturmalarını söyledim. Çocuklara fark ettirmeden çekime başlamamı söyledi. Sınıftaki sıralar dört sütun halinde dizilmişti. Sıraların çoğunda eflatun beyaz renkli masa örtüleri vardı. Her sırada iki öğrenci oturuyordu. İstiklal Marşı, Atatürk’ün Gençliğe Hitabesi ve Türk Bayrağı tahtanın üst tarafında yer almaktadır. Sınıfın duvarlarında Türkiye haritası, Ankara ili haritası, yazı köşesi, Atatürk Köşesi, resim köşesi, mevsim şeridi, saat, takvim, Kitaplık (Resim 1’de de görüldüğü gibi sınıfın küçük bir kitaplığı bulunmaktadır. Bu kitaplıkta; 33 tane ders kitabı ve öğrencilerin seviyelerine göre ayarlanmış 82 tane de hikaye kitabı bulunmaktadır.), çiçek, tema köşesi, Sosyal Kulüpler panosu, tahta ve tahta kalemleri, televizyon, VCD vardı.
 
T, beyaz bir önlük giymişti. T kılavuz kitabını eline aldı ve öğrencilere “Sayfa 54’ü açıyoruz” dedikten sonra kitabı T, masasına bıraktı. Öğrenciler masalarında duran kitapları açmaya başladılar. En ön sırada tek başına oturan kız öğrenci çantasına bakmak için ayağa kalktı. Pembe sırt çantasında bir şeyler arıyordu.</td><td>-OC*: T, sınıfa açıklama yapacağını, kendisinden 10 dakika sonra sınıfa gitmemi istedi.

-OC: T, güler yüzle beni karşıladı. Kamera çantasını T, masasına bırakıp çekime başladım.

-largely text and lecture based</td></tr>
</table>

* OC: Observer’s comments.

APPENDIX I

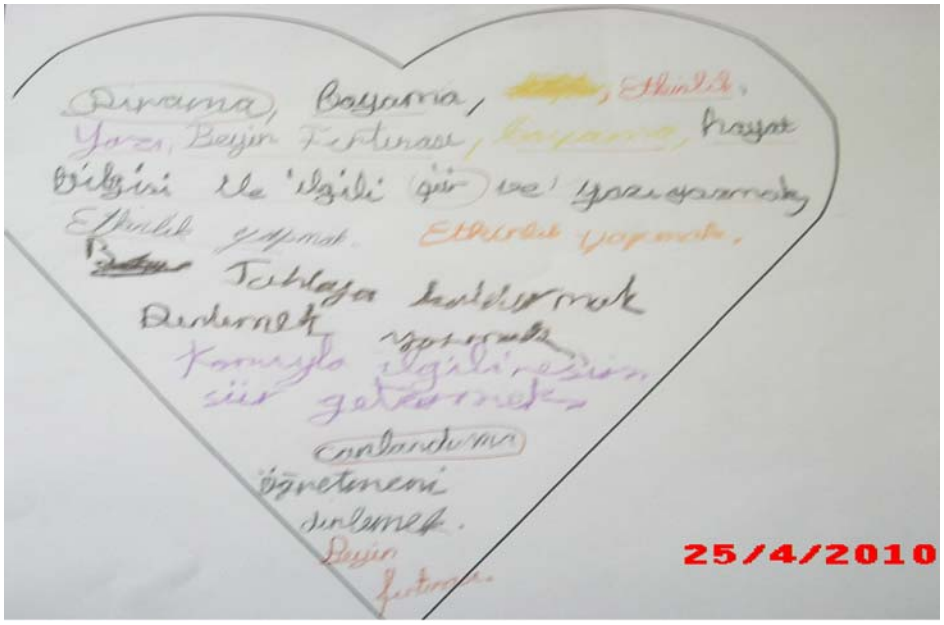
EXAMPLES OF STUDENTS' DRAWINGS


25/4/2010 17:22

APPENDIX J

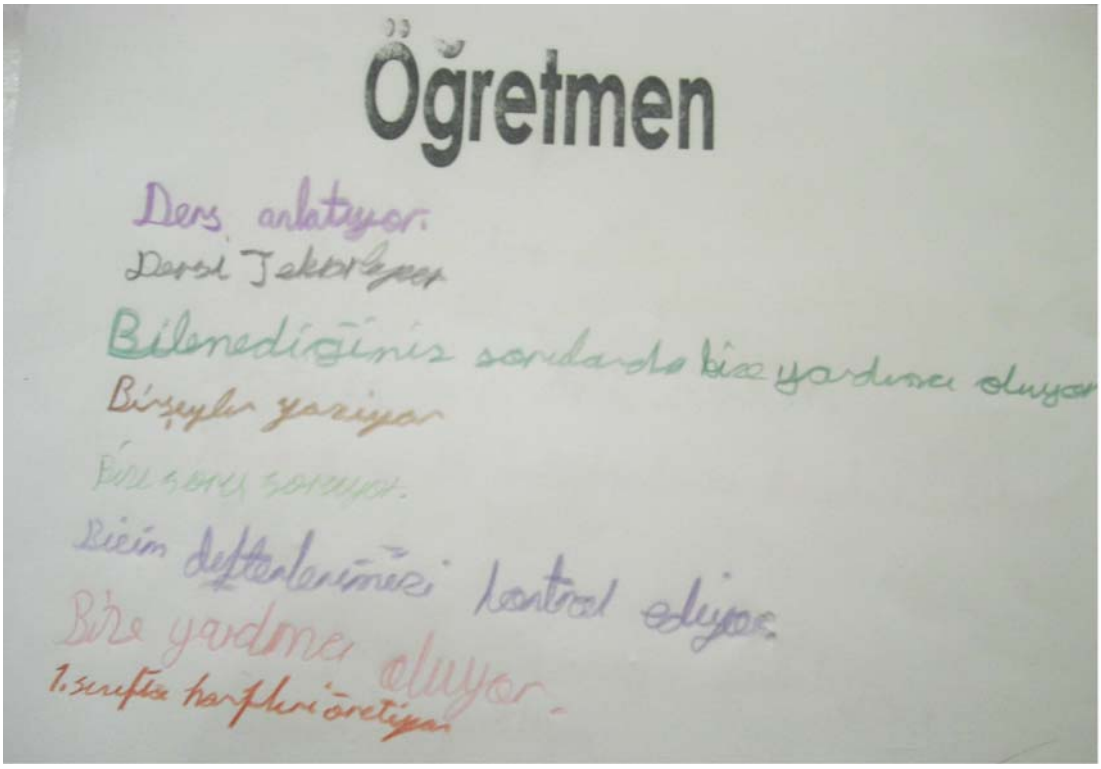
EXAMPLES OF STUDENTS' WRITINGS

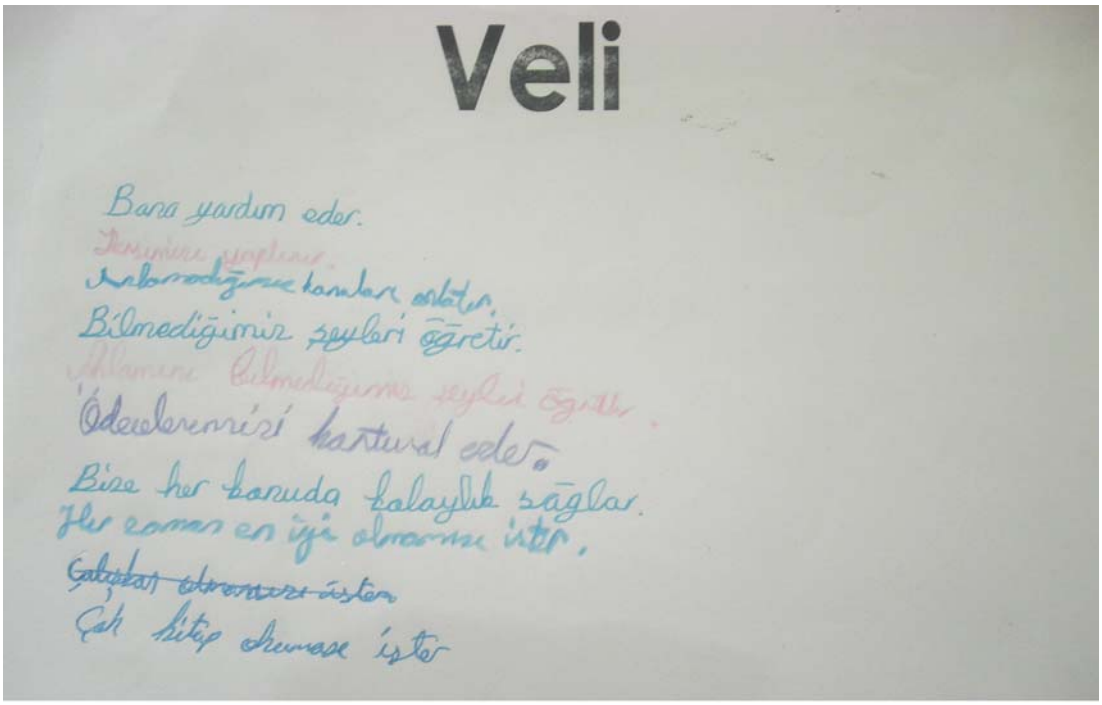
ABOUT THE BEST AND WORST PARTS OF LIFE SCIENCES COURSE

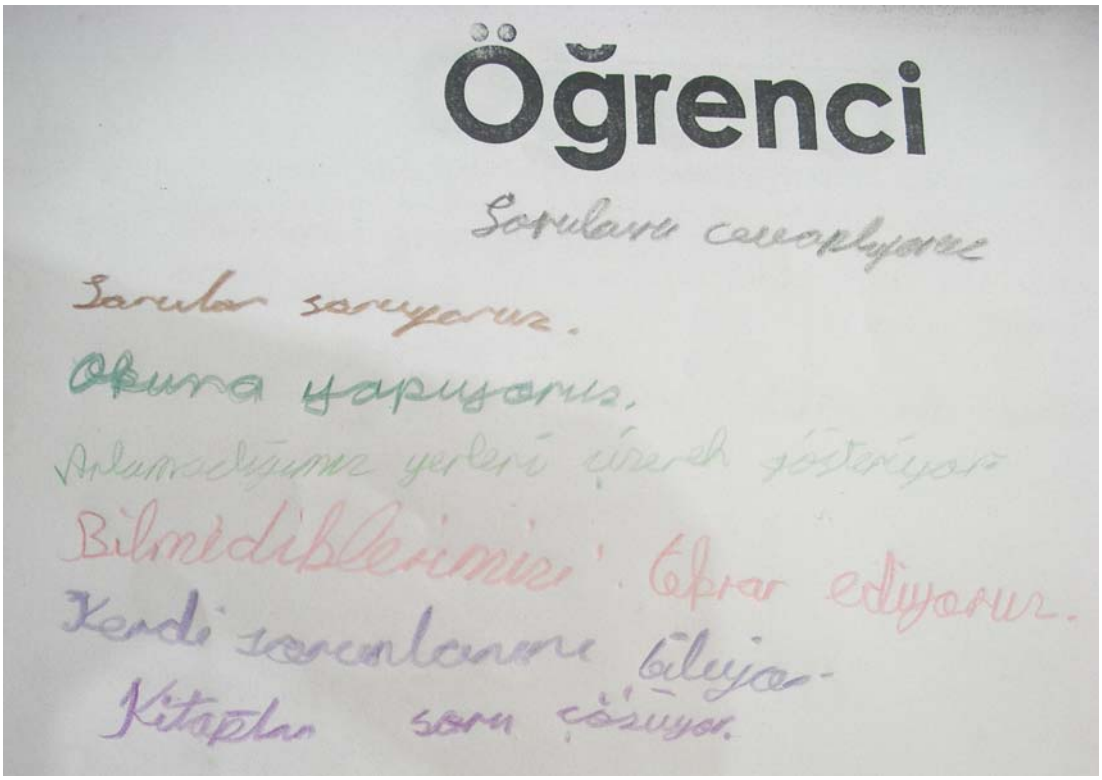


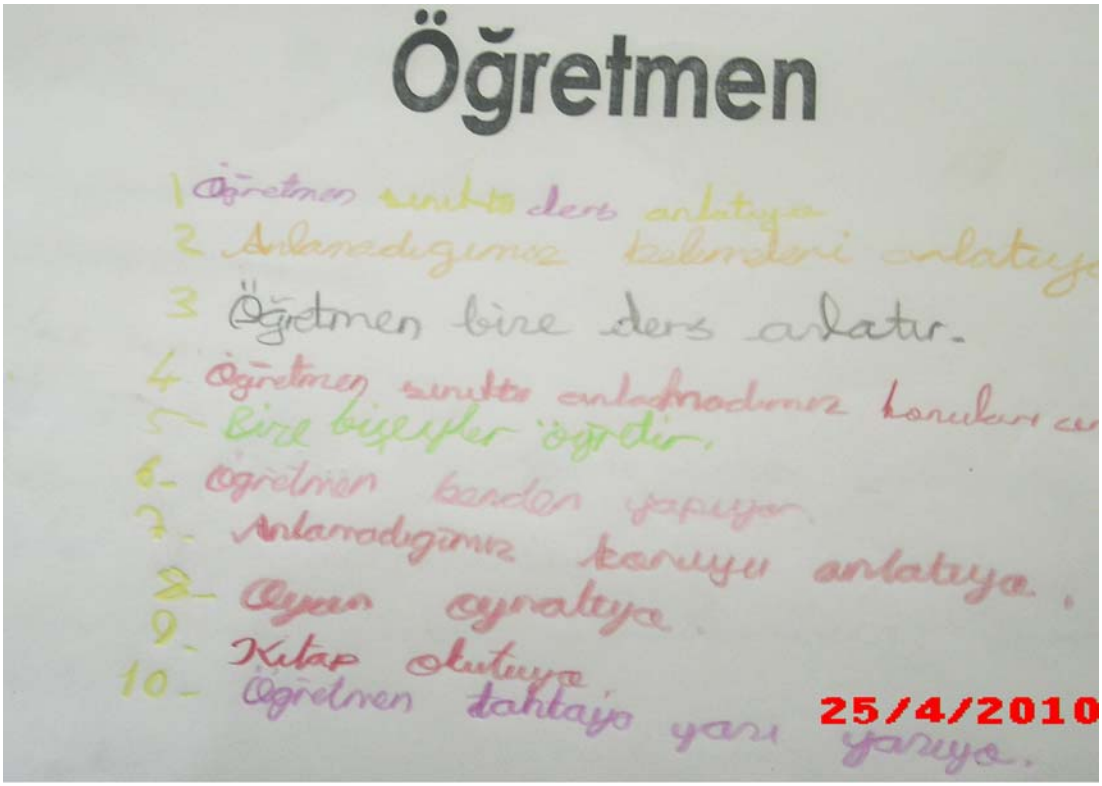
APPENDIX K

EXAMPLES OF STUDENTS' WRITINGS ABOUT THE ROLES






Öğrenci
Soruları cevaplıyoruz
Sorular sorıyoruz.
Ödevimizi yapıyoruz.
Anlamadığımız yerleri öğretmen gösteriyor
Bilmediklerimizi öğrenmeye çalışıyoruz.
Kendi seviyelerimizi biliyoruz.
Kitaplar soru çözüyor.


Öğretmen
1 Öğretmen sınıfta ders anlatıyor
2 Anlamadığımız konuları anlatıyor
3 Öğretmen bize ders anlatır.
4 Öğretmen sınıfta anlattıklarımız konuları
5- Bize bilgiler öğretir.
6- Öğretmen tahtadan yapıyor.
7- Anlamadığımız konuyu anlatıyor.
8- Ödevi söyletiyor.
9- Kitap okutuyor
10- Öğretmen tahtaya yazı yazıyor.
25/4/2010

APPENDIX L

INFORMED CONSENT FORM FOR

ADMINISTRATORS AND TEACHERS

Title of study: Implementation of Constructivist Life Sciences Curriculum: A Case Study

Principal researcher: P. Oya Taneri

Institute: Department of Educational Sciences Middle East Technical University

Introduction:

As you know I am a doctorate student at Middle East Technical University and doing a research about the implementation of current Life Sciences Curriculum. I want to understand the administrators', teachers' and the students' opinions about the implementation of current Life Sciences curriculum and to investigate the degree to which these perceptions are embedded in classroom practice. Since you are one of the practitioners of the curriculum, I would like to invite you to join this research study.

Background information:

The Ministry of National Education in Turkey needed data in order to understand how the constructivist curricula have been implemented in the schools, and to reveal what are challenges with the implementation. Investigating the school administrators', teachers' and the students' opinions about the education, the teachers' perceptions about the implementation of current Life Sciences curriculum, observing their classroom practice, reviewing types of assessment, and interviewing teachers will clarify the

coherences between classroom practice and stated perceptions about the Life Sciences curriculum.

Purpose of this research study

The purpose of the study is to understand the administrators', teachers' and the students' opinions about the implementation of current Life Sciences curriculum and to investigate the degree to which these perceptions are embedded in classroom practice.

Procedures

In this study I will record your classroom and then we will watch that video together. I will ask few questions about the delivery of the lesson and use of materials and teaching techniques. You can stop the video and make some explanations, too. If you do not mind I want to record to tape our conversation. This will take about half an hour of your time.

Possible risks or benefits

There is no risk involved in this study except your valuable time. There is no direct benefit to you also. However, the results of the study may help us to produce recommendations for implementation of the lesson.

Right of refusal to participate and withdrawal

You are free to choose to participate in the study. You may refuse to participate without any loss of benefit which you are otherwise entitled to. You may also withdraw any time from the study without any adverse. You may also refuse to answer some or all the questions if you don't feel comfortable with those questions.

Confidentiality

The information provided by you will remain confidential. Nobody except principal researcher will have an access to it. Your name and identity will also not be disclosed

at any time. However the data may be seen by Members of the Dissertation Jury, Ethical Review Committee and may be published in journal and elsewhere without giving your name or disclosing your identity.

Available Sources of Information

If you have any further questions you may contact Principal Researcher (P. Oya Taneri), on following phone number 0 536 411 93 43.

AUTHORIZATION

I have read and understand this consent form, and I volunteer to participate in this research study. I understand that I will receive a copy of this form. I voluntarily choose to participate, but I understand that my consent does not take away any legal rights in the case of negligence or other legal fault of anyone who is involved in this study. I further understand that nothing in this consent form is intended to replace any applicable laws.

APPENDIX M

GROUP ASSESSMENT FORM

GRUP DEĞERLENDİRME FORMU

Yönerge : Aşağıdaki form gruptaki her bir öğrencinin değerlendirilmesi için geliştirilmiştir.

Puanlama Anahtarı

5: Çok iyi 4: İyi 3: Orta 2: Geçer 1: Zayıf

BÜYÜKLER GRUBU

Öğrencilerin Adı Soyadı	Çalışmaya hazır oluş	Başkalarını dinleme	Sorumlulukları paylaşma	Grup arkadaşlarını destekleme	Tartışmalara katılma	Görüşlerini gerekçelendirme	Farklı görüşlere saygı duyma	Görev almaya istekli oluş	Zamanı verimli kullanma	Ödevleri tamamlama	Ödevlerini saklama	Toplam Puan
Zehra	2	2	2	2	2	2	2	2	2	2	2	
Baran	3	3	3	3	3	3	3	3	3	3	3	
Ömer	3	3	3	2	2	2	3	3	3	3	3	
Onur Çağrı	3	3	3	3	3	3	2	2	2	2	2	
Enes	3	3	3	3	3	3	4	4	4	4	4	
Hazal	3	3	3	3	3	4	4	4	4	4	4	
Bekir	5	5	5	5	5	5	5	5	5	5	5	
Hüsna	5	5	5	5	5	5	5	5	5	5	5	
Abdullah	3	3	2	2	2	2	2	2	2	2	2	
Seymanur	2	2	2	2	2	2	2	2	2	2	2	
Burak	5	5	5	4	4	4	5	5	5	5	5	
Reyhan	3	3	3	3	4	4	4	4	4	4	4	
Şerife	3	3	3	3	3	3	3	3	3	3	3	
Samet	5	5	4	4	4	4	5	5	5	5	5	

APPENDIX N

GROUP SELF-ASSESSMENT FORM

GRUP ÖZ DEĞERLENDİRME FORMU

Grubun Adı : Çalışkanlar Grubu

Gruptaki Öğrencilerin Adları : Ebru, Mert, Hasan, Fethat, Ezgi, Fatma, Metin, İlkay

Açıklama : Aşağıdaki tabloda grubunuzu en iyi şekilde ifade eden seçeneğin altına (x) işareti koyunuz.

DEĞERLENDİRİLECEK TUTUM VE DAVRANIŞLAR	DERECELER		
	Her zaman	Bazen	Hiçbir zaman
1. Araştırma planı yaptık.	X		
2. Görev dağılımı yaptık.	X		
3. Araştırmada çeşitli kaynaklardan yararlandık.	X		
4. Etkinlikleri birlikte hazırladık.	X		
5. Görüşlerimizi rahatlıkla söyledik.		X	
6. Grupta uyum içinde çalıştık.		X	
7. Birbirimizin görüş ve önerilerini dinledik.			X
8. Grupta birbirimize güvenerek çalıştık.	X		
9. Grupta birbirimizi takdir ettik.			X
10. Çalışmalarımız sırasında birbirimizi cesaretlendirdik.			X
11. Sorumluluklarımızı tam anlamıyla yerine getirdik.			X
12. Çalışmalarımızı etkin bir biçimde sunduk.	X		

Aşağıdaki soruları grubunuza göre cevaplandırınız.

1. Çalışmalar sırasında karşılaştığımız en büyük problem nedir?
Hiç kimsenin bana ihtiyaç duymaması.

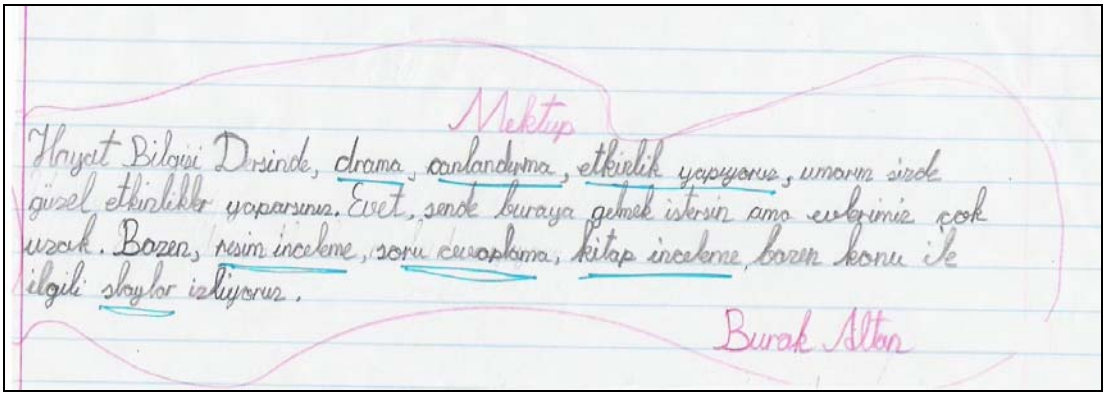
2. Problem neden kaynaklanıyordu ?
Bana grup başkanımız Melike fazla görev vermedi.

3. Grubumuzun en iyi olduğu alan nedir? Niçin?
Kapak tasarımı. Çünkü Ebru çok güzel yaptı. Ona çok teşekkür ediyorum.

4. Grup olarak daha iyi olabilirdik. Fakat,
Melike kimseye görev vermedi ve başarısız olduk.

APPENDIX O

EXAMPLES OF STUDENTS' LETTERS

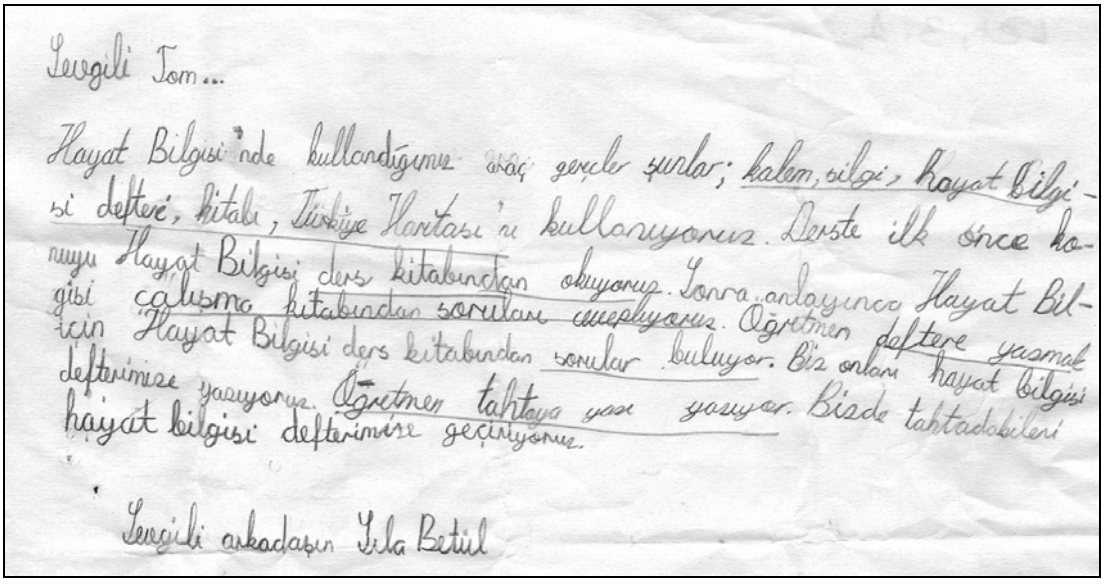


Mektup

Hayat Bilgisi Dersinde, drama, canlandırma, etkinlik yapıyoruz, umarım sizde güzel etkinlikler yaparsınız. Evet, sende buraya gelmek istersin ama evlerimiz çok uzak. Bazen, resim inceleme, soru cevaplama, kitap inceleme, bazen konu ile ilgili slaylar izliyoruz.

Burak Alton

LET.3B.8

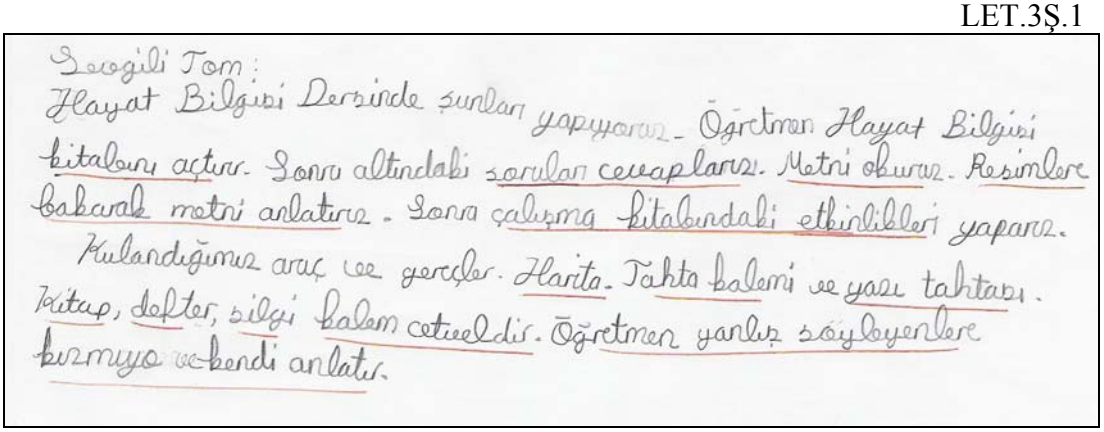


Sevgili Tom...

Hayat Bilgisi'nde kullandığımız araç gereçler şunlar; kalem, silgi, hayat bilgisi defteri, kitabı, Türkiye Haritası'nı kullanıyoruz. Derste ilk önce konuyu Hayat Bilgisi ders kitabından okuyoruz. Sonra anlayınca Hayat Bilgisi çalışma kitabından soruları cevaplıyoruz. Öğretmen deftere yazmak için Hayat Bilgisi ders kitabından sorular buluyor. Biz onları hayat bilgisi defterimize yazıyoruz. Öğretmen tahtaya yazı yazıyor. Bizde tahtadakileri hayat bilgisi defterimize geçiriyoruz.

Sevgili arkadaşın Yıla Betül

LET.3Ş.1

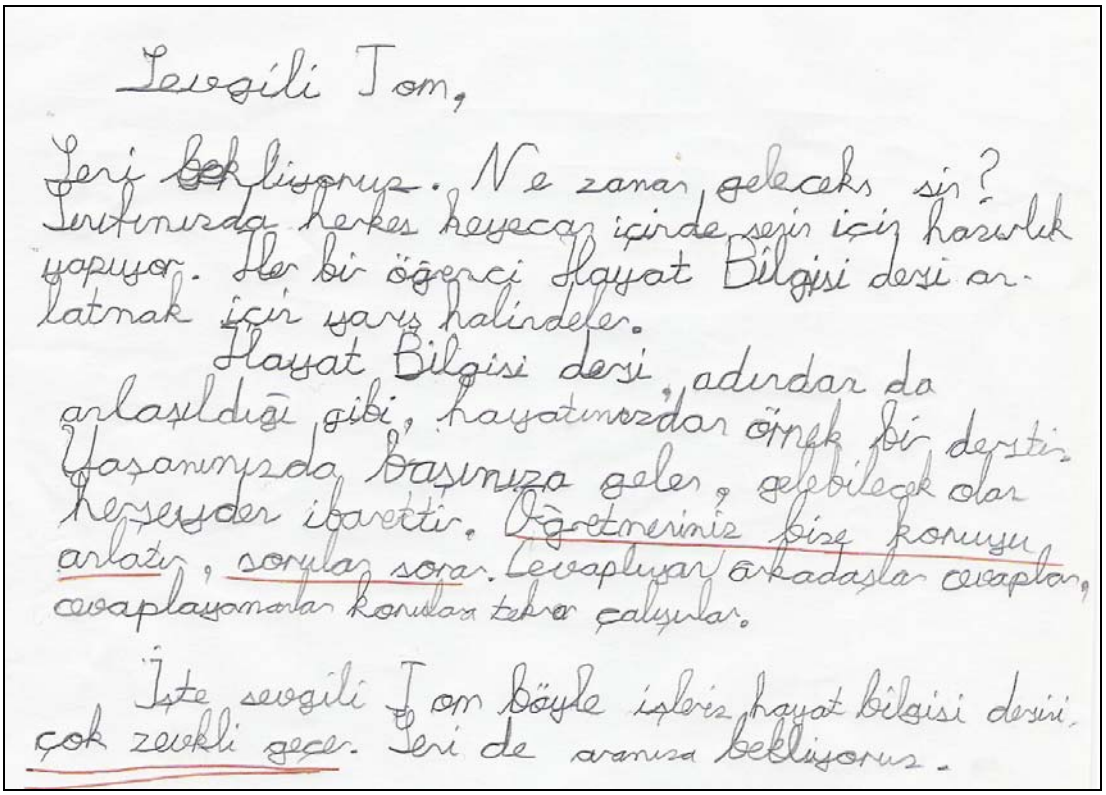


Sevgili Tom:

Hayat Bilgisi Dersinde şunları yapıyoruz. Öğretmen Hayat Bilgisi kitabını açtırır. Sonra altındaki soruları cevaplarız. Metni okuruz. Resimlere bakarak metni anlatırız. Sonra çalışma kitabındaki etkinlikleri yaparız.

Kullandığımız araç ve gereçler. Harita. Tahta kalemi ve yazı tahtası. Kitap, defter, silgi kalem cetveldir. Öğretmen yanlış söyleyenlere kızmıyo ve kendi anlatır.

LET.3Ş.15



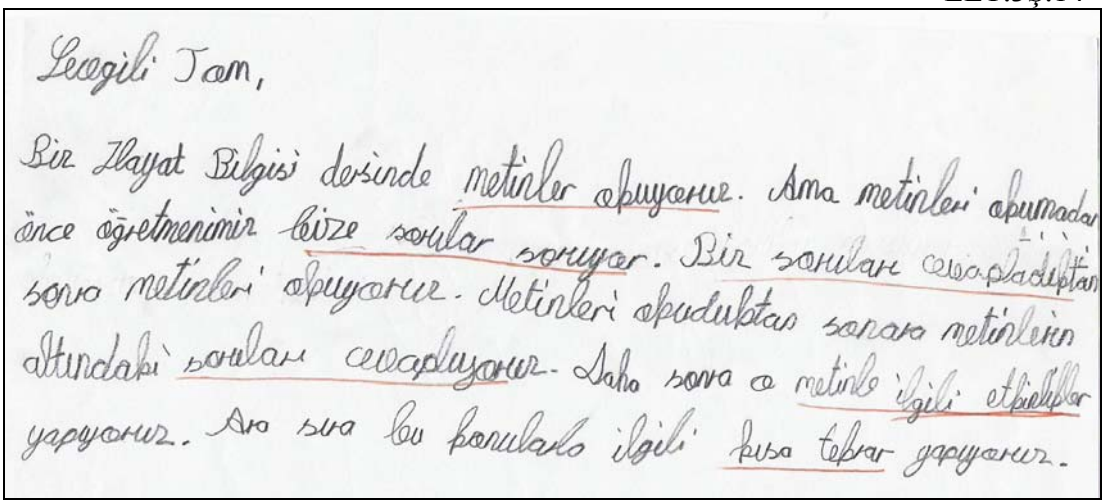
Sevgili Tom,

Seni bekliyoruz. Ne zaman geleceksin? Sınıfımızda herkes heyecan içinde senin için hazırlık yapıyor. Her bir öğrenci Hayat Bilgisi dersi anlatmak için yarış halindeler.

Hayat Bilgisi dersi, adından da anlaşıldığı gibi, hayatımızdan örnek bir derstir. Yaşamımızda başımıza gelen, gelebilecek olan herşeyden ibarettir. Öğretmenimiz bize konuyu anlatır, sorular sorar. Cevaplayan arkadaşlar cevaplar, cevaplayamayanlar konuları tekrar çalışırlar.

İşte sevgili Tom böyle işleriz hayat bilgisi dersini, çok zevkli geçer. Seni de aramıza bekliyoruz.

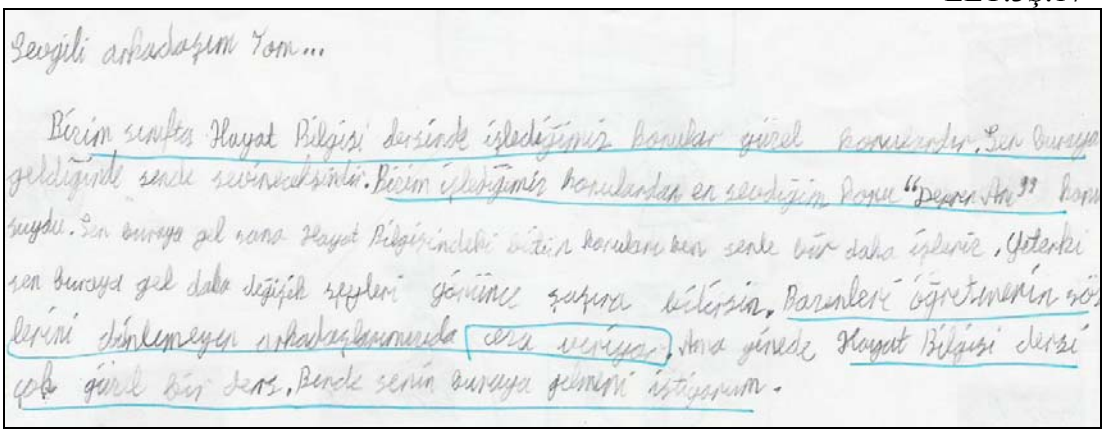
LET.3Ş.14



Sevgili Tom,

Bir Hayat Bilgisi dersinde metinler okuyoruz. Ama metinleri okumadan önce öğretmenimiz bize sorular soruyor. Bir soruları cevaplıyoruz sonra metinleri okuyoruz. Metinleri okuduktan sonra metinlerin altındaki soruları cevaplıyoruz. Daha sonra o metinle ilgili etkinlikler yapıyoruz. Ara sıra bu konularla ilgili kısa tekrar yapıyoruz.

LET.3Ş.17



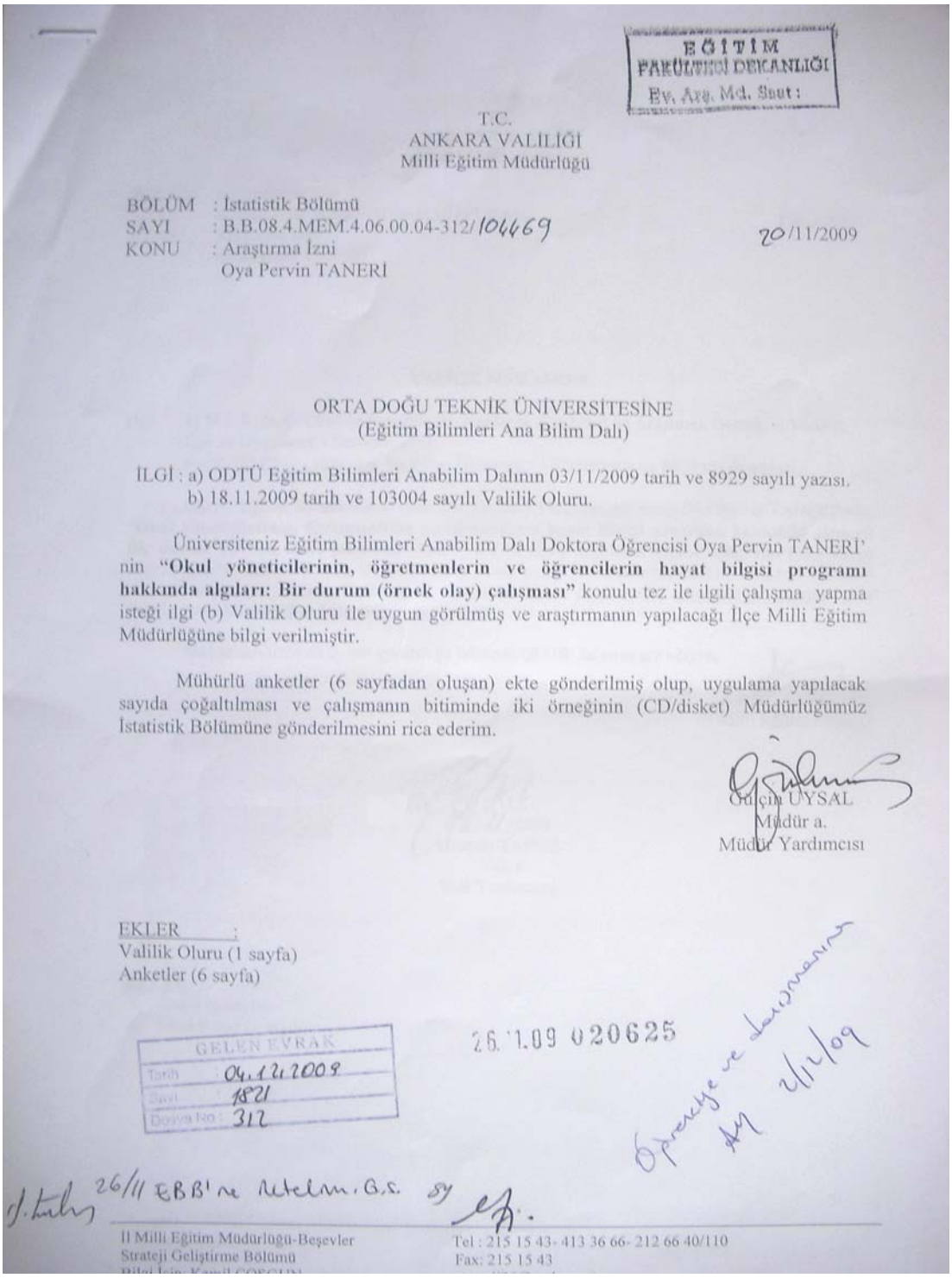
Sevgili arkadaşım Tom...

Bizim sınıfta Hayat Bilgisi dersinde işlediğimiz konular güzel konulardır. Sen buraya geldiğinde sende seveceksin. Bizim işlediğimiz konulardan en sevdiğim Payız "Deyerli Ata" konusuydu. Sen buraya gel sonra Hayat Bilgisindeki bütün konuları sen de bir daha işleyiniz. Yeterki sen buraya gel daha değişik şeyleri görünce şaşıra kalarsın. Bazılarımız öğretmenin sözlerini dinlemeyen arkadaşlarımıza ceza veriyoruz. Ama genede Hayat Bilgisi dersi çok güzel bir ders. Bende senin buraya gelmeni istiyorum.

LET.3Ş.20

APPENDIX P

ETHICS COMMITTEE PERMISSION FORMS



EĞİTİM FAKÜLTESİ DEKANLIĞI
Ev. Arş. Md. Saat:

T.C.
ANKARA VALİLİĞİ
Milli Eğitim Müdürlüğü

BÖLÜM : İstatistik Bölümü
SAYI : B.B.08.4.MEM.4.06.00.04-312/104469
KONU : Araştırma İzni
Oya Pervin TANERİ

20/11/2009

ORTA DOĞU TEKNİK ÜNİVERSİTESİNE
(Eğitim Bilimleri Ana Bilim Dalı)

İLGİ : a) ODTÜ Eğitim Bilimleri Anabilim Dalının 03/11/2009 tarih ve 8929 sayılı yazısı.
b) 18.11.2009 tarih ve 103004 sayılı Valilik Oluru.

Üniversiteniz Eğitim Bilimleri Anabilim Dalı Doktora Öğrencisi Oya Pervin TANERİ' nin **"Okul yöneticilerinin, öğretmenlerin ve öğrencilerin hayat bilgisi programı hakkında algıları: Bir durum (örnek olay) çalışması"** konulu tez ile ilgili çalışma yapma isteği ilgi (b) Valilik Oluru ile uygun görülmüş ve araştırmanın yapılacağı İlçe Milli Eğitim Müdürlüğüne bilgi verilmiştir.

Mühürlü anketler (6 sayfadan oluşan) ekte gönderilmiş olup, uygulama yapılacak sayıda çoğaltılması ve çalışmanın bitiminde iki örneğinin (CD/disket) Müdürlüğümüz İstatistik Bölümüne gönderilmesini rica ederim.

Oğuzcan UYSAL
Müdür a.
Müdür Yardımcısı

EKLER :
Valilik Oluru (1 sayfa)
Anketler (6 sayfa)

GELEN EVRAK
Tarih : 04.12.2009
Sayı : 1821
Dosya No : 312

26.11.09 020625

Öğrenciye ve danışmana
AM 2/12/09

26/11 EBB'ne Ntelm. G.S. SY

İl Milli Eğitim Müdürlüğü-Beşevler
Strateji Geliştirme Bölümü
Tel : 215 15 43- 413 36 66- 212 66 40/110
Fax: 215 15 43

T.C.
ANKARA VALİLİĞİ
Milli Eğitim Müdürlüğü

BÖLÜM : İstatistik Bölümü
SAYI : B B.08.4.MEM.4.06.00.06-312/105004 13/11/2009
KONU : Araştırma İzni
Oya Pervin TANERİ

VALİLİK MAKAMINA

İlgi: a) M.E.B. Bağlı Okul ve Kurumlarda Yapılacak Araştırma ve Araştırma Desteğine Yönelik İzin ve Uygulama Yönergesi.
b) ODTÜ Eğitim Bilimleri Anabilim Dalının 03/11/2009 tarih ve 8929 sayılı yazısı.

ODTÜ Eğitim Bilimleri Anabilim Dalı Doktora Programı öğrencisi Oya Pervin TANERİ' nin, **"Okul yöneticilerinin, öğretmenlerin ve öğrencilerin hayat bilgisi programı hakkında algıları: Bir durum (Örnek olay) çalışması"** konulu tez ile ilgili uygulama yapma isteği ilgi (a) yönerge doğrultusunda Müdürlüğümüz Değerlendirme Komisyonu tarafından incelenmiş olup, (6 sayfadan oluşan) anketlerin ve ses kaydının ek listedeki ilimiz okullarında, **gönüllülük esasına** göre uygulanması Müdürlüğümüzce uygun görülmüştür.

Makamlarınızca da uygun görüldüğü takdirde OLUR' larınıza arz ederim.

Kâmil AYDOĞAN
Milli Eğitim Müdürü

OLUR
13/11/2009
Mustafa TAPSIZ
Vali a.
Vali Yardımcısı

EKLER:
1- Anket (6 sayfa)
2- Okul listesi (1 sayfa)

Ankara İl Milli Eğitim Müdürlüğü/ Beşevler
İstatistik Bölümü
Faks : 223 75 22
Tel : (312) 212 66 40-124
: 413 36 91

APPENDIX Q

TURKISH SUMMARY

"İnsanların yaşamına,
çabalarına egemen olan güç;
yaratma, yeni bir şey bulma
yeteneğidir."

Mustafa Kemal Atatürk

GİRİŞ VE İLGİLİ ALAN YAZIN

Değişmeyen tek şeyin değişim olduğu günümüzde, her saniye yeni bilgilere ulaşılmakta, edinilen bilgilerin geçerli ve güvenir olduğu süre gitgide kısalmaktadır. Yaşanılan o anda doğru olan bir bilgi, bir saniye sonra doğru olmayabilir. Bu nedenle okullarda verilmeye başlanan bilgiler öğrenci okuldan mezun olana kadar anlamsız hale gelebilmektedir (Gonzalez, 2007). Bilginin giderek arttığı, teknolojinin hızla geliştiği günümüz dünyasına ayak uydurabilecek bireyler yetiştirmek için eğitim sistemlerinin gözden geçirilerek gerekli reform ve düzeltme çalışmalarının yapılması kaçınılmaz hale gelmiştir. (El-Sheikh Hasan, 2000; Flett & Wallace, 2005; Korthagen, 2005; Orpwood & Barnett, 1997).

Eğitimciler, eğitimin felsefesinin ve öğretmen eğitiminin günümüz dünyasında yaşanan önemli bilimsel, ekonomik, teknolojik ve sosyal değişimlere uygun hale getirilmesinin önemi üzerinde durmaktadır (Black & Deci, 2000; Burris & Garton, 2006; Joshy, 2008; Hançer, Şensoy & Yıldırım, 2003; Huitt, 1999; Kaptan, 1999; Temizkan & Bağcı, 2008; Ornstein & Hunkins, 1998; Soylu, 2004; Yıldırım 2006). Bilim, ekonomi, teknoloji ve sosyal alanlardaki hızlı değişimler insanların yaşamını doğrudan etkilemektedir (Ornstein & Hunkins, 1998). Soylu

(2004) bu değişimlere karşı hayatta kalabilmek için toplumların eğitim sistemlerinin, bilginin yapılandırılmasını vurgulayan bir biçimde yenilenmesi gerektiğimi savunmaktadır.

Eğitim Reformlarına İhtiyaç Duyulması ve Reformların Yönü

Günümüzde, bilim, teknoloji ve sosyal alanlarda yaşanan hızlı değişimlere bağlı olarak toplumların eğitim ihtiyaçları da değişmiştir. Dünyada sürekli artan bilgi birikimiyle başa çıkabilmek, hızla değişen ve gelişen teknolojiye ayak uydurabilmek, farklı bakış açılarını anlayabilmek ve değerlendirebilmek için bireylerin bilgi edinme ve edindikleri bilgileri kullanma becerileri kazanması gerekmektedir. Bu becerilerin kazanılmasında eğitim kurumlarına büyük sorumluluklar düşmektedir. Eğitimde köklü bir yenileşme yapmak için ilk olarak, eğitim felsefesinin değiştirilmesi gereklidir. Daha sonra bu felsefeyle uyumlu eğitim programları geliştirilmelidir (Burris & Garton, 2006; Temizkan & Bağcı, 2008; Soylu, 2004; Yıldırım 2006).

Eğitim felsefeleri ve eğitim programları ile ilgili alan-yazına göz atıldığında, günümüzde geleneksel-davranışçı yaklaşımdan ilerici-yapılandırmacı yaklaşıma doğru bir eğilim olduğu görülmektedir (Bednar, Cunningham, Duffy & Perry, 1995; Dick, 1995; Rowland, 1995). Geçmişteki öğretim programlarının pek çoğunun davranışçı yaklaşıma dayandığı görülmüştür. Diğer bir deyişle, geçmişteki öğretim programlarının başlangıç noktası hedef ve hedef davranışlardı. İçerik, öğretim stratejileri ve kullanılacak materyaller ve ölçme değerlendirme yöntemleri bu hedeflere ulaşmayı sağlayacak biçimde seçilirdi. Öğretim programları izlenmesi gereken yolu kesin olarak anlatmakta, öğretmenlerin değişiklik yapmasına olanak tanımamaktaydı. Geleneksel yaklaşımda bilginin mutlak olduğu ve bireylere aktarılması gerektiği düşünülürdü. Bu nedenle öğretmenler bütün bilgilerin sahibi ve aktarıcısı olarak görülürdü. Öğretmenin rolü bilgileri aktarmak, öğrencilerin rolü ise bu bilgileri almaktır. Öğretim süreci, öğretmen-merkezli olduğu için sınıfın düzenlenişinden kullanılan öğretim tekniklerine kadar her konuda karar verme yetkisine sahip tek kişi öğretmendir. Geleneksel yaklaşımda öğretmen en çok düz anlatım yöntemini kullanır. Öğretmenler, sınıf kontrolünü sağlamak ve öğrencileri izlemek için ödül ve cezayı kullanırlar. Öğrencilerden beklenen, verilen bilgiyi

sorgulamadan alması ve ezberlemesidir. Öğrenciyi değerlendirirken sürece değil sonuca odaklanılır.

Ancak geleneksel eğitim yaklaşımı ciddi olarak sorgulanmaktadır (Korthagen, 2005). İleri görüşlü eğitimciler davranışçı yaklaşımın artık günümüz koşullarına uymadığını savunmaktadırlar (Bednar, Cunningham, Duffy & Perry, 1995; Dick, 1995; Rowland, 1995). Bu nedenle eğitimciler eğitim sürecini "öğretme" yerine "öğrenme" olarak gören yapılandırmacı yaklaşıma yönelmektedirler. Yapılandırmacı yaklaşımda öğrencilerin "ne" öğrendikleri değil "nasıl" öğrendikleri üzerinde durulmaktadır (Bıkmaz, 2006; Ryan & Cooper, 2004).

Yapılandırmacı yaklaşımın savunucuları "tek bir doğru" yerine, koşullara ve bireylerin bakış açılarına bağlı olarak değişen "birden fazla doğru" olduğunu savunmaktadırlar. Hiç kimse, dünyada sürekli artan bilgi birikiminin tümüne sahip olamaz. Her birey, kendi ilgi ve ihtiyaçları doğrultusunda ne öğreneceğine karar verebilir. Bu nedenle öğretmenler, bilginin sahibi olarak değil, bilginin nasıl elde edilebileceği konusunda öğrencilere yol gösteren birer kılavuz olarak görülürler. Öğretim süreci, öğrenci-merkezlidir. Yani, öğrencilerin bireysel farklılıkları dikkate alınır ve bireylerin kendilerine özgü özellikleri ön plana çıkarılır. Bu yaklaşım her bireyin sahip olduğu bilgilerle yeni aldığı bilgileri kendine özgü biçimde yapılandırdığını öne sürer (Köse, 2006). Bu nedenle de öğretim yöntem ve tekniklerinin mümkün olduğunca çeşitlendirilmesi gerektiğini vurgulamaktadır. Bu yaklaşımda hedef davranışlar yerine, öğretim süreci sonunda öğrencinin ne elde ettiği, yani kazanımları vurgulanmaktadır. Bu kazanımlara ulaşmak için işbirliğine dayalı çalışma ve öğrencinin aktif katılımını ön plana çıkaran öğretim yöntem ve teknikleri benimsenmektedir (Kukla, 2000; Vrasidas & McIsaac, 2001). Öğrenciyi değerlendirme bir süreç olarak algılanmaktadır. Yani, öğrencinin ortaya çıkardığı "ürüne" değil, o ürünü ortaya çıkarmaya çalışırken yaşadığı "sürece" odaklanılmaktadır. Önceden belirlenen bilgi birikiminin aktarılarak ezberletilmesi yerine, bilginin öğrenci tarafından yapılandırılması üzerinde durulmaktadır.

Alan yazından da anlaşıldığı gibi günümüz dünyasının ihtiyaç duyduğu; eleştirel düşünen, sorun çözen, bilgi edinme yollarını bilen bireyleri yetiştirmek için yapılandırmacı yaklaşımı benimseyen öğretim programlarına ihtiyaç vardır. Bu nedenle eğitim reformları davranışçı yaklaşımdan yapılandırmacı yaklaşıma doğru bir yol izlemektedir

Yapılandırmacı Yaklaşım

Son yirmi beş yıldır yapılandırmacı yaklaşım eğitim uygulamaları üzerinde önemli bir etkiye sahiptir (Jones & Brader-Araje, 2002). Yapılandırmacı yaklaşımın kökleri Dewey (1916), Piaget (1970) ve Vygotsky'ye (1978) dayanmaktadır. Yapılandırmacı yaklaşım öğretme-öğrenme sürecinin karmaşıklığını açıklayan bir teoridir. Bu yaklaşım insanların kendi deneyimleri ve düşünmeleri sonucunda kendi bilgilerini ve zihinsel modellerini oluşturduklarını savunmaktadır. Marlowe ve Page (2005) bilginin, bir kişiden diğerine aktarılamayacağını, bireylerin kendi bilgilerini ve kendi anlayışlarını yapılandırdıklarını belirtmektedir. Her çocuk önceki bildiklerini yeni bilgilerle birleştirerek kendi anlamını inşa etmektedir (Billett 1996; Sherman & Kurshan, 2005; Shunk, 2004).

Yapılandırmacı yaklaşımın birkaç türü bulunmaktadır (Neimeyer & Raskin, 2001). Bilişsel, radikal, ve sosyal yapılandırmacılık bunlardan bazılarıdır.

Piaget (1967) öğrenmeyi özümseme, uyum ve bilişsel denge kavramları ile açıklamaktadır. Yeni bilgi, bireyin önbilgileri ile çelişmiyorsa özümsenir ve yeni bir bilişsel denge oluşur. Eğer yeni bilgi önbilgi ile çelişiyorsa; yeni bilgi var olan yapıya özümsenemediği için dengesizlik yaşanır. Birey bu dengesizlikten kurtulmak için bir çaba içine girer ve bunun sonucunda yeni bir bilişsel yapı oluşturur.

Bilişsel yapılandırmacılığın temel esaslarına ek olarak radikal yapılandırmacılık, gerçekle ilgili bilginin bireyin kendi deneyimlerine, algılama kapasitelerine ve çevre ile etkileşimine bağlı olarak oluştuğunu kabul eder (von Glasersfeld, 1992).

Sosyal yapılandırmacılığın temelinde ise Vygotsky (1978)'nin görüşleri bulunmaktadır. Vygotsky'nin teorisi, kültür ve kültürün etkileşimini ön plana alır ve yapılanmanın işbirliğine dayalı olarak geliştirildiği sayıltısına dayanır.

Yapılandırmacı Yaklaşımın İlkeleri

Yapılandırmacılık temelli yaklaşımlarda ortak olan birkaç temel ilke vardır. Öğrenme aktif bir süreç olması ve öğrencinin aktif katılımını gerektirmesi en önemli ilkelerdendir. Aktif öğrenme ve öğrenme sürecine tam katılım öğrencinin daha derin ve daha zengin bir anlayış kazanmasını sağlar. Birey bilgiyi nasıl

kullanacağını öğrenir ve böylece öğrendiklerini anlamlı bir biçimde kullanmaya teşvik edilir (El-Hindi, 1998; Açıkgöz, 2002).

İkinci ilke ise, öğrenmenin kendi kişisel dünyasını anlamlandırması için bireye yardımcı olmasıdır (Grabe & Grabe, 2001). Yapılandırmacı yaklaşımı benimsemiş olan öğretmenler, öğrencileri sorgulamaya teşvik eder ve onların bakış açılarına değer verir (Brooks & Brooks, 1999). Öğrenciler kendi öğrenmelerini doğrudan yönlendirirler ve gerekli durumlarda öğretmen tarafından yardım sağlanır (El-Hindi, 1998).

Yapılandırmacılığı esas alan öğretim metotları öğrenmenin amaçlarını öğrenci için açık olması gerektiğini (Honebein, et al., 1993) ve öğrenme ortamının gerçek dünyayla ilişkili olması gerektiğini belirtmektedir. Öğrencilerin okulda öğrendikleri ile gerçek hayatta olanlar arasında bir bağlantının kurulması da gerekmektedir. Öğretimde, problem çözme, eleştirel düşünme, yaratıcı düşünme ve bilimsel etkinliklerde yer alma konularına ağırlık verilmektedir (Wilson, 1996). Bu yaklaşımda, öğretimin içeriğinde zengin ve gerçek hayattan alınan örnekler bulunması ve bunların öğrencilere sunulması büyük önem kazanmaktadır. Ayrıca öğrencilerin karar verme sürecinde yer alması gerektiği üzerinde durulmaktadır (Jonassen, 2004, s.11-12).

Yapılandırmacı öğretim yöntemlerinin altı temel unsuru vardır: duruma uyma, gruplama, köprü kurma, sorgulama, sergileme ve yansıtma. Bu unsurlar öğrenme-öğretme sürecinin ayrılmaz parçalarıdır.

Öğretmenlerin ve Öğrencilerin Yapılandırmacı Sınıflardaki Rolleri

Öğretmenin, öğrencilerin ve ailelerin yapılandırmacı yaklaşımın esas alındığı bir öğrenme sürecindeki yeni rollerini bilmesi ve tanımlaması önem kazanmıştır. Yapılandırmacı yaklaşımın esas alındığı bir öğrenme-öğretme sürecinde öğretmenin rolü doğrudan bilgi aktarmak değil, öğrencilerin zihinsel yapılarının oluşmasına rehberlik etmek ve öğrencilerin anlama kabiliyetlerinin gelişmesine uygun öğrenme etkinlikleri düzenlemektir (Reid, 1993; Tharp & Gallimore, 1989).

Öğrencilerden beklene rol ise öğrenme sürecine aktif olarak katılmaları ve öğrenme sürecinde aktif rol almalarıdır. Bu yolla öğrencilerden kendi öğrenmelerini

sorumluluğunu almaları beklenmektedir (Branscombe, Castle, Dorsey, Surbeck, & Taylor, 2003).

Yapılandırmacı Öğrenme-Öğretme Süreci

Yapılandırmacı öğrenme sürecinin temel öğesi öğrencilerdir. Öğrenciler demokratik bir sınıf ortamında günlük yaşam problemlerinin karmaşıklığını çözerek yaşam boyu kullanacakları bilgilerini oluştururlar. Öğretim, iletişim bilgisi değil yapılandırma sürecini destekleyen bir süreçtir (Duffy & Cunningham, 1996. p. 171).

Yapılandırmacı sınıflarda, öğrenme etkinliklerinde otantik (özgün) öğrenme görevleri kullanılarak öğrencilerin dikkati çekilmeye çalışılır. Ayrıca öğrencilerin ilgi ve meraklarını uyandıran, düşündürücü sorular sorulur. Öğrenme-öğretme süreci öğrencilerin aktif katılımını, birlikte çalışmasını ve kendi gizil güçlerini ortaya çıkarmasını sağlayacak biçimde düzenlenmektedir (El-Sheikh Hasan, 2000).

Etkinlikler farklı öğrenme stillerine ve farklı ihtiyaçlara cevap verecek biçimdedir. Öğrencilerin bireysel tercihleri ve algıları göz önünde tutulur (Kolb, 1984; Mamchur, 1996).

Yapılandırmacı Değerlendirme

Yapılandırmacı değerlendirmede ürün değil süreç değerlendirilir. Geleneksel ölçme değerlendirme yöntemleri (örn: yazılı sınavlar) eleştirel düşünme, yaratıcılık ve yansıtma becerilerini ölçememektedir (Lewis & Johnson, 2002). Diğer yandan alternatif değerlendirme (örn: akran değerlendirme, ürün seçki dosyası) öğrencilerin üst düzey düşünme becerilerini de ölçebilmektedir (Boud, Cohen & Sampson, 1999; Cowan, 1998, Gipps, 1999; Race, 1998). Yapılandırmacı öğrenme ortamları çoklu bakış açılarını ortaya çıkarmayı amaçlar, bu nedenle sadece geleneksel yöntemlerle farklı bakış açılarının değerlendirilmesi mümkün değildir.

Dünya'daki Eğitim Reformları

Bu bölümde dünyada yapılandırmacı yaklaşımı benimseyen eğitim programı reformları ile ilgili araştırmalara yer verilmektedir.

Otto (1994), Kentucky Eğitim Reformu Yasası'nın (KERA) bir parçası olan ilköğretim sosyal bilgiler dersinde yapılan reformları incelemiştir. Anayasa Mahkemesi, var olan eğitim sisteminin, kaynakların bölgelere dağıtılması ve finansmandaki dengesizlikler nedeniyle anayasaya aykırı olduğunu belirtmişlerdir. Hükümetin belirlediği komisyon üyeleri var olan ilköğretim sosyal bilgiler dersinin kitaba dayalı olduğunu ve bu derste öğrencilerin derse pasif olarak katıldıklarını görmüşlerdir. Bunun üzerine eğitimde parça parça değil tümden bir değişim olması gerektiğini savunmuşlardır. Araştırmacılar, öğretimin öğrencilerin gelişimsel özelliklerine uygun olmasını ve konuların disiplinler arası olmasını önermişlerdir. Ayrıca toplu öğretim, çoklu değerlendirme ve proje çalışmalarının programın bir parçası olması gerektiğini belirtmişlerdir. Bu araştırma sonuçlarından elde edilen bilimsel bilgilere dayalı olarak sosyal bilgiler programında reformlar yapılmıştır. Yeni program tematik yaklaşımı, işbirliğine dayalı öğretimi, disiplinler arası yaklaşımı, ve çoklu değerlendirmeyi benimsemektedir (Kentucky General Assembly, 1990).

Benzer bir çalışma da 2000-2002 yıllarında Yunanistan'da yapılmıştır. Anaokulu, ilk ve ortaöğretim programlarını kapsayan, "Esnek Bölge Programı" adı verilen tematik yaklaşımı benimseyen bir program geliştirilmiştir. Bu program girişimciliği, eleştirel düşünmeyi, işbirliğine dayalı çalışmayı ve disiplinler arası yaklaşımı benimsemektedir. Ancak, yapılan değişikliklerin Yunanistan'ın eğitim felsefinde hiçbir değişikliğe yol açmadığı görülmüştür (Flouris & Pasais, 2003).

Greybeck, Gomez ve Mendoza (2004), Meksika'da, lise programlarında 1997 yılında yapılan reformları inceledikleri çalışmalarında, öğrenci-merkezli, teknolojiyi daha çok kullanan, öğrencilerin belli değerleri, tutumları ve becerileri geliştirmelerine odaklanan bir program geliştirildiğini belirtmektedirler. Yenilen programdaki bütün derslerdeki etkinliklerin işbirliğine dayalı öğrenme, eleştirel düşünme, bağımsız öğrenme, öz-değerlendirme, dürüstlük, sorumluluk, başkalarına saygı duyma ve sosyal bağlılık gibi belli becerilerin kazanılmasını sağlamayı

amaçladığını belirtmişlerdir. Bu çalışma, yapılan reformların öğrenci tutumlarını önemli derecede etkilediğini göstermektedir.

Jie ve Desheng (2004), ahlâk eğitimi programında yapılan reformları incelemişlerdir. Bu dersin ve ders kitaplarının öğrencilerin ahlaki gelişimine katkıda bulunmasını sağlamak için, dersin içeriğinin öğrencilere ve onların yaşamlarına odaklandığını ortaya çıkarmışlardır.

Benzer bir şekilde, Zhan ve Ning (2004) program reformunun arkasında yatan üç önemli ilkenin altını çizmişlerdir: yeni program öğrencilerin yaşamını geliştirmeye odaklanmalıdır; programın ideolojik, hümanist, pratik ve bütünleştirici boyutları olmalıdır ve dersin hedefleri, öğrencilerin duygu, tutum, değer, yönelim, yetenek ve bilgilerini geliştirmelidir.

Yaptıkları durum çalışmasında Lewin, Mavers ve Somekh (2003) yeni uygulamada yer alan bilgi ve iletişim teknolojisi (BİT) kullanımının öğrenmeyi geliştirme gücünü araştırmışlardır. Öğretimin etkini arttırmak için program reformunun gerekli olduğunu belirtmişlerdir. Onlara göre yapılacak reformlar var olan pedagojik programdan eleştirel düşünme ve bilginin yapılandırılması yönünde olmalıdır. Teknoloji, öğrenmeyi değiştirmede önemli rol oynar. Internet büyük bir bilgi kaynağı olduğu ve çoklu bakış açıları sağladığı için öğrencilerin farklı ihtiyaçlarını karşılamak için yardımcı olacaktır. Bu nedenle, programların yapısı değiştirilmeye zorlanmalı ve öğretim ve öğrenme etkinliklerinde teknolojiden yararlanılmalıdır.

Verhoeven ve Verloop (2002) yaptıkları durum çalışmasında Hollanda'da klasikler programı reformunun program konuları ve değerlendirme boyutlarının öğretim uygulamalarına yansıtılıp yansıtılmadığını araştırmışlardır. Programda yapılan reformlar ne kadar yenilikçi olursa olsun uygulamalar yenilikçi değilse, yapılan reformların başarılı olamayacağını savunmuşlardır. Araştırmalarının bulguları, öğretmenlerin hala geleneksel değerlendirme yöntemlerini uyguladığını; derin anlayışları değil yüzeysel bilgileri ölçtüğünü ortaya çıkarmıştır. Öğretmenlerin reforma uyum sağlamak için alternatif değerlendirme yöntemlerini öğrenmeleri gerektiğini belirtmişlerdir.

Williamsa ve Charlesb (2008) Karayip'lerde okul öncesi programlarda yapılan reformları inceledikleri çalışmalarında, program değişikliğinin etkili olması için öğrenme ortamının ve öğretmen eğitiminin değiştirilmesinin gerekli olduğunu

belirtmişlerdir. Değişimin uygulayıcısı olan öğretmenlerin eğitim ortamlarını kültürü yansıtacak biçimde yapılandırmasına destek olunması gerektiğini vurgulamışlardır. Onlara göre, program, öğrencilerin aktif olduğu görüşüne dayanmalıdır. Bu nedenle öğrencilerin öğretim sırasında değişik materyaller kullanmasına ve birbirleriyle etkileşim kurmasına olanak sağlayan eğitim ortamları hazırlanmasının önemini vurgulamışlardır.

Türkiye'deki Eğitim Reformları

Günümüz dünyasına rahatça uyum sağlayabilecek, bilgi edinme yollarını bilen ve bunları kullanan, edindiği bilgileri sorgulayarak analiz eden, karşılaştığı sorunlara çözümler üretebilen, yaratıcı ve eleştirel düşünebilen bireyler yetiştirmek için bütün dünyada ve Türkiye'de eğitim sistemlerinde değişimler yaşanmaktadır. Ülkemizde eğitim alanında son beş yıldır Milli Eğitim Bakanlığı (MEB) tarafından köklü reform çalışmalarına başlanmıştır. Bu reform çalışmalarının odak noktasında, bilginin olduğu gibi alınması yerine, eski bilgiler ile harmanlanarak yeniden yapılandırılmasını öngören yapılandırmacı yaklaşım yer almaktadır.

Düzeltme ve yeniden yapılandırma çalışmalarına eğitimin ilk basamağından, yani ilköğretimden başlanmıştır. Günümüzde ilköğretimin amacı sadece okuma-yazma ve aritmetik öğretmekle sınırlı değildir. Artık, ilköğretimden mezun olan bir bireyin etkili iletişim kurma, sorun çözme, gittikçe artan bilgilerle baş edebilme, eleştirel ve yaratıcı düşünebilme, diğer insanların görüşlerine saygı duyma gibi önemli becerileri de kazanmış olması beklenmektedir. İlköğretim çağındaki çocuklar dünyayı bir bütün olarak algıladıkları için ilköğretimde amaçlanan becerileri elde etmelerine yardım eden disiplinler arası bir ders gerekmektedir. Hayat Bilgisi ve Sosyal Bilgiler dersleri içeriklerini, sosyal bilimler, doğa bilimleri ve sanattan aldıkları için öğrencilere yukarıda sözü edilen becerileri kazandırılmasında çok önemli yere sahiptirler.

Ancak sadece programların değiştirilmesi istenilen amaçlara ulaşılmasının garantisi değildir. Bu nedenle eğitimde yapılan değişikliklerin gerekçeleri, eğitimin uygulayıcısı olan öğretmen, öğrenci ve okul yöneticileri tarafından çok iyi kavranmalıdır. Uygulamada yaşanan aksaklıkların belirlenmesinde ve böylece

programın düzenlenip geliştirilmesinde programın uygulanmasında yer alan bireylerin görüşlerinin alınması önemlidir.

Bu çalışmada ilköğretimin ilk üç sınıfında okutulan Hayat Bilgisi dersinin uygulanması sırasında yaşananlar konusunda öğretmen, öğrenci ve okul yöneticilerinin algılarının derinlemesine incelenmesi amaçlanmıştır.

YÖNTEM

Bu durum çalışmasının üç amacı vardır: (1) Hayat Bilgisi dersinin işlenişi hakkında seçilen bir okuldaki, öğretmen, öğrenci ve okul yöneticilerinin algılarını inceleme;, (2) bu algıların sınıf uygulamalarına ne derecede aktarıldığını araştırmak; (3) programın uygulanmasının yapılandırmacı pedagojinin ilkelerine ne derece uygun olduğunu belirlemektir.

Araştırmaya ışık tutan araştırma soruları şunlardır:

1. Hayat Bilgisi Programının genel özellikleri nelerdir?
2. Öğretmen, öğrenci ve yöneticilere göre Hayat Bilgisi Programı nasıl uygulanmaktadır?
   - 2.1. Hayat Bilgisi programının uygulanmasında algılanan öğrenci, öğretmen ve veli rolleri nelerdir?
   - 2.2. Hayat Bilgisi derslerinde kullanılan temel öğretim yöntem ve teknikleri nelerdir?
   - 2.3. Hayat Bilgisi derslerinde kullanılan temel öğretim materyalleri nelerdir?
   - 2.4. Hayat Bilgisi derslerinde kullanılan temel ölçme-değerlendirme teknikleri nelerdir?
3. Hayat Bilgisi Programının uygulanışı yapılandırmacı pedagoji ile uyumlu mudur?

Bu sorulara cevap vermek amacıyla nitel araştırma desenlerinden durum çalışması kullanılmıştır. Durum çalışması yöntemi, özellikle katılımcıların algıları

hakkında ayrıntılı bilgi almak için uygundur. Durum çalışması, bireylerin, grupların ya da kurumların bütünsel ve derinlemesine incelenmesi için ideal bir yöntemdir (Baxter ve Jack, 2008; Feagin, Orum & Sjoperg, 1991; Yin, 2009). Durum çalışması ayrıca, veri toplama, bilgi analizi ve sonuçlarının raporlanması konusunda sistematik bir yol sunmaktadır.

Durum çalışmaları örneklemli çalışmalar olmadığı için, araştırmacının katılımcılarını seçerken bilgi odaklı örnekleme yöntemi kullanılmıştır (Yin, 2009). Yani, çalışmaya katılmaya istekli ve araştırma için gereken bilgileri verebilecek katılımcılar seçilmiştir. Ankara'dan seçilen bir devlet ilköğretim okulunda çalışan bir okul müdürü, 2 müdür yardımcısı, 4 sınıf öğretmeni ile okulun 2. ve 3. sınıflarında öğrenim gören 87 öğrenci araştırmaya katılmıştır.

Bu araştırmada, veri toplama çeşitlemesi (triangulation) yöntemi gözetilerek birden fazla kaynaktan veri toplanmıştır. Veriler, belge incelemesi, Hayat Bilgisi ders gözlemi, yarı yapılandırılmış görüşme, anımsamayı sağlayan görüşme ve yaratıcı drama yöntemleri kullanılarak toplanmıştır. Görüşmelerin tümü ses kayıt cihazı ile, sınıf gözlemleri ve yaratıcı drama oturumları kamera ile kaydedilmiştir. Görüşmelerden elde edilen ham verilerden alıntılar yapılmıştır (Patton, 1987). Sınıf gözlemlerinde önceden belirlenen boyutlar göz önünde tutularak sınıf içindeki her türlü etkinlik doğal akışı içerisinde kaydedilmiştir.

Bu araştırmada veri toplama amacıyla kullanılan anımsamayı sağlayan görüşme yöntemi konusunda ülkemizde yok denecek kadar az çalışma yapılmıştır. Anımsamayı sağlayan görüşme yöntemi şu varsayıma dayanmaktadır: bireylerin içsel düşünce süreçleri, dış dünyadaki gerçek olaylar gibi gözlenebilir. Bu yöntemde katılımcılara video, fotoğraf gibi ip uçları (uyaran) verilerek, gözlenen olayın yaşandığı andaki düşünce süreçlerini sözel olarak aktarmaları istenir. Belirtilen bu yöntem bireylerin kişisel algılarının derinlemesine incelemesinde en iyi yöntemlerden biridir.

Yaratıcı drama yöntemi ise çok az çalışmada veri toplama yöntemi olarak kullanılmıştır. Son zamanlarda sanat, dramayı da içine alarak, niteliksel araştırmalarda kullanılan önemli bir yöntemlerden biri haline gelmiştir (Barone & Eisner, 1997, 2006). Yaratıcı drama paylaşıma dayanan bir etkinliktir ve her katılımcının paylaşımı değerlidir. Bu yöntemi uygulamak için özel bir stüdyo, sahne ya da araç gereçlere ihtiyaç duyulmamaktadır. Yaratıcı drama uygulaması için

hevesli, eğitimli, samimimi bir lider, bir mekan ve zaman yeterlidir. Yaratıcı drama her yaş grubuna ve her türlü yeteneğe uygulanabilen, kendini yansıtmayı ve bağımsız düşünmeyi sağlayan bir yöntemdir (McCaslin, 2006). Drama sırasında bireyler hayal kurar, hareket eder, resim çizer, dans eder; gerçek veya hayali bireysel deneyimlerini paylaşırlar (Pinciotti, 1993). Bu yöntem katılımcıların duygusal, zihinsel, bedensel, sözel ve sosyal yönlerden tam katılımını sağlar. Yaratıcı dramanın temeli oyuna dayandığı için özellikle yaştaki küçük çocukların algı ve deneyimlerini ortaya çıkarmak için en iyi yöntemdir (McCaslin, 2006).

Araştırmada elde edilen veriler içerik analizi yoluyla çözümlenmiştir. Bu süreçte ilk olarak, yapılan görüşmelerden, gözlemlerden ve yaratıcı drama oturumlarından elde edilen nitel veriler kağıda dökülerek metin haline getirilmiştir. Veriler metinleştirilirken ses tonu ve tonlamalara dikkat edilmiş, bunlar duygu ve anlayışın birer göstergesi olarak kabul edilmiştir. Bu duygu ve düşünceleri yazılı metinde belirtmek için bazı noktalama işaretleri, simgeler ve işaretler kullanılmıştır (örn: gülümseyen yüz, yıldız…v.s.). Daha sonra bu metinlerin görüşmeciler tarafından okunması sağlanarak yanlış anlamalar varsa düzeltilmiştir. Katılımcı (üye) doğrulaması olarak adlandırılan bu yöntem nitel araştırma sonuçlarının güvenilirlik ve geçerliğini artırmaktadır (Yanow & Schwartz-Shea, 2006).

Daha sonra bu metinler araştırmacı ve iki meslektaşı tarafından defalarca okunarak veriler düzenlenmiş birbirine benzer veriler, belli temalar çerçevesinde bir araya getirilerek veriler arası ilişkiler yapılandırılmış ve kodlamalar yapılmıştır. Veriler çeşitli grafikler, şekiller ve tablolar yardımıyla gösterilmiştir. Elde edilen kodlar ve aralarındaki ilişkilere bakılarak, verilerin altında yatan olgular açıklanmıştır.

Araştırma sonuçlarını yazarken katılımcılara takma isimler ve numaralar verilmiş, kullanılan fotoğraflarda bireylerin yüzleri belirsizleştirilerek veri gizliliği sağlanmıştır. Araştırmada verileri toplanmadan önce üniversitenin etik kurulundan ve Milli Eğitim Bakanlığı'ndan gerekli izinler alınmıştır. Katılımcıların rızasını almak için gönüllü katılım formları hazırlanmış, araştırmanın amacı, araştırmaya katılmanın faydaları ve riskleri katılımcılara anlatılmış, çalışmadan istedikleri zaman çekilebilecekleri, böyle bir durumda zarar görmeyecekleri yazılı ve sözlü olarak bildirilmiştir.

Bu çalışma bir durum çalışması olduğundan sonuçların başka durumlara genellenebilirliği sınırlıdır. Ayrıca çalışmaya ilköğretim 2. ve 3. sınıf öğrencileri dahil edilmiş, henüz okuma yazma bilmedikleri için 1. sınıflar çalışmanın dışında tutulmuştur.

SONUÇLAR

Bu kısımda çalışmadan elde edilen sonuçlar sunulmaktadır.

Belge analizlerinden elde edilen araştırma bulguları, MEB tarafından hazırlanan Hayat Bilgisi Programında yer alan içerik, öğrenme-öğretme süreçleri, öğretim teknikleri, ölçme-değerlendirme yöntemlerinin yapılandırmacı yaklaşıma uygun olarak hazırlandığını ortaya koymuştur. Aynı zamanda programda önerilen öğretmen-öğrenci rolleri, tematik yaklaşımın izlenmesi ve öğrenci merkezli yaklaşımın benimsenmesi gibi noktalarında yapılandırmacı yaklaşımla uyumlu olduğunu görülmektedir.

Ancak programda önerilen bazı kazanımların yapılandırmacı yaklaşıma uygun olmadığı görülmüştür. Kazanımlar genel olarak, Bloom sınıflandırmasının bilgi ve kavrama düzeylerinin üzerine çıkamamıştır. Ayrıca kazanımlar, beceriler, ara disiplinler arasında nasıl ilişki kurulacağı açıklanmamıştır.

Okul yöneticilerinin ve öğretmenlerin program tanıtımı için verilen hizmet-içi eğitimlerden memnun kalmadıkları gözlenmiştir. Okul yöneticileri ve öğretmenleri programın yaklaşımını beğendiklerini, ancak ülkemizde uygulanan sınav sistemi ile çeliştiğini ifade etmişlerdir. Bir yandan farklı bakış açılarını geliştirmeye çalışırken, diğer yandan her öğrenciyi aynı sınava hazırlamanın zorluğuna değinmişlerdir.

Anımsamayı sağlayan görüşmelerde öğretmenler programın içeriğini beğendiklerini belirtmekle birlikte, programda kazanımlar için ayrılan zamanlarda bir uyumsuzluk olduğunu; yani bazı kazanımlara gereğinden fazla bazılarına da yetersiz zaman ayrıldığını ifade etmişlerdir.

Hayat Bilgisi ders gözlemlerinden, yarı yapılandırılmış görüşme, anımsamayı sağlayan görüşme ve yaratıcı drama oturumlarından elde edilen araştırma bulguları programın uygulanmasında bazı sıkıntılar yaşandığını göstermektedir.

Yapılandırmacı yaklaşıma uygun bir sınıfın, öncelikle grup çalışmalarına olanak sağlayacak şekilde düzenlenmesi beklenir. Ancak sınıf gözlemlerinde, gözlenen tüm

sınıflarda geleneksel biçimde arka arkaya dizilmiş sıralar olduğu, öğretmen masasının öğrenci sıralarının önünde yer aldığı görülmüştür. Bu düzenlemenin amacı sorulduğunda ise öğretmenler tarafından bütün öğrencilerin tahtayı ve öğretmeni rahat görebilmesi ve öğretmeni duyabilmesi, öğrencilerin sınavlarda kopya çekmelerinin engellenmesi, sınıf mevcudunun kalabalık ve, sınıfların küçük olması gibi nedenler belirtilmiştir. Ancak öğretmeni merkeze alan bu düzenleme, düz anlatım ve gösterim gibi geleneksel yöntemlere olanak sağlarken; işbirliğine dayalı çalışmalara, öğrenci etkileşimine ve düşüncelerin paylaşımına olanak vermemektedir.

Öğrencilerin Hayat Bilgisi derslerine katılımı, öğretmeni dinlemek, kitaptan bir metin okumak, öğretmenin sorduğu sorulara cevap vermek ve gösteri (örn: film, power point sunumu…vs.) izlemek ile sınırlı kalmaktadır. Öğrencilerin kendi sorularını üretmelerine, düşünce süreçleri üzerinde düşünmelerine, birbirleriyle ve öğretmenle karşılıklı iletişim kurmalarına çok fazla fırsat verilmemektedir.

Diğer yandan sınıftaki panoların düzenlenmesinde çocuklara sorumluluklar verilmekte; her öğrencinin konuşmak için söz hakkı alması için ortam yaratılmaktadır. Öğretmenlerin, öğrencilerden gelen farklı düşünceleri olumlu karşılamakla birlikte, çok farklı düşüncelere temkinli yaklaştıkları gözlenmiştir.

Sınıflarda teknolojik donanımlar (örn: projeksiyon, televizyon, film oynatıcı) olmasına rağmen öğretmenlerin bu araçları derslerle tam olarak bütünleştiremedikleri, bu araçları kullanmada sorunlar yaşadıkları gözlenmiştir.

Öğrenci ders ve çalışma kitapları ile tahta en sık kullanılan öğretim araçlarıdır. Bunun yanı sıra, öğretmenlerin hâlâ bilgiyi aktaran, öğrencilerin de bilgiyi pasif olarak alan rolleri yansıttıkları görülmüştür.

Belge incelemesinden elde edilen bulgular hazırlanan Hayat Bilgisi programında veli katılımına önem verildiğini göstermektedir. Ancak öğretmenler, yöneticiler ve öğrenciler velinin rollerinin okulda yapılan veli toplantılarına katılmak, öğrenciyi okula getirip-götürmek ve ödevlerine yardım etmek olarak algılamaktadır. Yöneticiler yeni programda velinin rolü konusunda düzenlenen aile eğitimi seminerlerine katılımın çok az olduğunu belirtmişlerdir. Öğretmenler ise, velilerin öğrenciye verilen ödevleri bizzat yapmalarından şikayet etmektedir.

Görüşmelerde öğretmenlerin grup çalışmalarının ve drama yönteminin Hayat Bilgisi dersi için çok uygun yöntemler olduğunu belirttikleri halde geleneksel

yöntemleri kullanmaya devam ettikleri gözlenmiştir. Düz anlatım, soru-cevap, ve gösteri yöntemlerinin Hayat Bilgisi dersinde en çok kullanılan öğretim yöntemleri olduğu gözlenmiştir. Gözlemler ve yaratıcı drama oturumlarından elde edilen araştırma bulguları öğretmenlerin drama yöntemini yanlış kullandıklarını ortaya çıkarmıştır. Rol yapma çalışmalarının drama ile aynı olarak algılandığı gözlenmiştir. Öğretmenler grup çalışmalarını çok sık kullanamamalarının sebebini sınıfların kalabalık olması, grup çalışmaların çok zaman alması ve grup değerlendirmesinin nasıl yapılacağını bilmemeleri olarak açıklamışlardır. Ayrıca, yöneticiler görüşmelerde, öğretmenlerin programı zamanında yetiştirememe kaygısı taşıdıklarını belirtmişlerdir.

İlköğretimin ilk üç sınıfında not verme amacıyla yazılı sınav yapılamayacağı yönetmelikte belirtilmiştir. Sınıflarda yapılan gözlemler yazılı ve sözlü sınavlar ile öz-değerlendirme en çok kullanılan ölçme ve değerlendirme yöntemleri olduğunu göstermiştir. Öğretmenler bu yöntemleri öğrencilerin eksiklerini görme amaçlı kullandıklarını belirtmişlerdir. Küçükahmet (2005)'in de belirttiği gibi programın değerlendirme kısmında sorunlar yaşanmaktadır. Araştırma bulguları, öğretmenlerin, eleştirel düşünme, yaratıcı düşünme, problem-çözme, sorgulama gibi becerileri ölçmeyi sağlayacak alternatif ölçme değerlendirme yöntemlerini kullanma konusunda sıkıntılar yaşadığını ortaya çıkarmıştır.

ÖNERİLER

Hayat Bilgisi Programı İçin Öneriler

Program belgelerinin yeniden gözden geçirilerek kazanımlar için ayrılan zamanlar düzenlenmeli, Bloom sınıflandırmasının daha üst düzeylerinde kazanımlar yazılarak öğrencilerin üst-düzey beceriler kazanmalarına olanak sağlanmalıdır. Ayrıca programda yapılması gereken değişiklikleri belirlerken programın uygulayıcısı olan öğretmenlerin fikirlerine de başvurulmalıdır.

Programda yapılan değişikliklerin hayata geçirilmesi için eğitim paydaşlarının yeterli biçimde bilgilendirilmesi sağlanmalı, hizmet-içi eğitimler sürekli ve nitelikli hale getirilmelidir. Öğretmenlerin hizmet-öncesi eğitimleri sırasında yeni programın felsefesini yansıtacak bir eğitim almaları gerekmektedir. Bu nedenle öğretmen

eğitimi programları düzenlenirken uygulanacak programlara uyum sağlayacak öğretmenler yetiştirilmesine özen gösterilmelidir.

Sınıflara tekli sıralar ya da sandalyeler yerleştirilerek işbirliğine ve tartışmaya dayalı bir sınıf ortamı yaratılmalıdır. Yapılan etkinliklerle, öğrenmek için öğretmeni görmenin şart olmadığı öğrencilere gösterilerek kendi öğrenmelerinin sorumluluğunu almaları için öğrenciler teşvik edilmelidir.

Öğrencilerin derslere aktif katılımını sağlayacak öğretim yöntem ve tekniklerinin kullanılması konusunda öğretmenlere rehberlik yapılmalıdır. Yaratıcı drama yönteminin derslerde verimli olarak kullanılabilmesi için öğretmenlere yaratıcı drama kursu verilmelidir. Ayrıca, sınıflarda var olan teknolojik araçların derslerle bütünleştirilmesi için, öğretmenlerin teknoloji okur-yazarı haline getirilmesi için gerekli önlemler alınmalıdır.

Geleneksel ölçme değerlendirme yöntemlerinin yanı sıra üst düzey becerileri ölçen alternatif yöntemleri kullanma konusunda öğretmenlere hizmet-içi eğitim verilmelidir.

Velilerin kendi çocuklarının eğitimine etkin bir biçimde katılmasını sağlamak için gerekli önlemler alınmalı; öğrenci, veli ve öğretmen rolleri konusunda velilere rehberlik yapılmalıdır.

Gelecekteki Araştırmalar İçin Öneriler

Bu çalışma bir uygulama (süreç) değerlendirmesidir ve yenilenen bir programın işleyen ve aksayan yanlarının açığa çıkarılmasına katkıda bulunmaktadır. Bu çalışmada sadece programın uygulanışı üzerinde durulmuştur. Dolayısıyla, programın içeriği, kazanımları, öğrenci, öğretmen ve veli rolleri incelenmiş; öğretim ve değerlendirme yöntemlerinin pratikteki kullanımlarına bakılmıştır. Bunlara ek olarak programın çıktılarını (örn: öğrenci başarısını) da inceleyen program değerlendirme çalışmaları yapılabilir.

Bu çalışma katılımcıların algılarını ortaya çıkarmayı amaçladığı için niteliksel araştırma yöntemleri kullanılmıştır. Gelecekti çalışmalar niceliksel ve niteliksel araştırma yöntemlerini birlikte kullanarak, uzunlamasına (longitudinal) çalışmalar yapabilirler.

Bu bir durum çalışması olduğu için çalışmanın sonunda araştırmacılar ne olduğu, niçin olduğu ve neyin daha önemli olacağı konusunda gelecekte yapılabilecek araştırmalar hakkında bir keskin anlayış kazanabilirler.

Bu çalışmanın sınırlılıkları gelecekti çalışmalar için birer öneri olabilir. Diğer bir deyişle, bu çalışma sadece Ankara ilinden seçilen bir ilköğretim okulu ile sınırlıdır. Gelecekte karşılaştırmalı çalışmalar yapılabilir.

Ayrıca bu çalışmada sadece öğretmen, öğrenci ve yöneticilerin görüşlerine başvurulmuştur. İzleyen çalışmalar velilerin görüşlerine de başvurmalıdır.

Bu araştırmada ilk kez kullanılan yaratıcı drama yöntemi özellikle küçük yaştaki çocuklardan veri toplamayı kolaylaştıran bir yöntemdir. Araştırmacılar niteliksel çalışmalarında bu yöntemden yararlanmalıdırlar.

Ülkemizde çok fazla kullanılmayan anımsamayı sağlayan görüşmeler bireylerin içsel düşüncelerini sözel hale getirdiği için derinlemesine bilgi toplamayı amaçlayan araştırmacılar tarafından kullanılabilir.

Teknoloji ve internet'in sınıf ortamında kullanımının öneminin artması nedeniyle, bu konularda yapılacak çalışmalarla Teknoloji ve internet kullanımının öğrencinin derse aktif katılımına etkileri incelenebilir.

VITA

Pervin Oya Taneri was born in 1977, in Ankara. She received her B.A. in Measurement and Evaluation in Education at the Department of Educational Sciences in Hacettepe University, in 2000. Then, started to work as a classroom teacher in Samsun, 2002. In 2004 she received her M. Ed. in Curriculum and Instruction from the Department of Educational Sciences in Middle East Technical University. In 2005 she was accepted to the doctoral program in Curriculum and Instruction field in the Department of Educational Sciences in METU. Having worked as a classroom teacher she has been appointed as the District Coordinator of European Union Projects, in Kalecik-Ankara. In 2009-Spring Semester she studied as an Erasmus student in Belgium at the Gent University for six months. Since 2009 onwards, she has been working as classroom teacher at Vildan Nurettin Demirer Elementary School. She presented a paper titled, "Quality of Education in Turkish Rural Schools: A Needs Assessment Study" at the 16th International Conference on Learning, Barcelona, Spain, 1-4 July, 2009. Her interests lie with curriculum development, measurement and evaluation, teacher education, rural education, affective domain, both qualitative and quantitative studies, and creative drama.