The Role of Portfolios in EFL Student Teachers'

Professional Development:

A Case Study

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By Zeynep Banu Koçoğlu

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VITA

Z E Y N E P   K O Ç O Ğ L U

EDUCATION

1997 - 2006	Ph.D., Boğaziçi University, Department of Foreign Language Education, Istanbul, Turkey.
1995 –1997	M. A., Bogaziçi University, Department of Foreign Language Education, Istanbul, Turkey.
1990 –1993	M. A., The American University, Department of American/English Language and Literature, Washington , D.C., USA.
1985 - 1989	B.A., Hacettepe University, Department of English Language and Literature, Ankara, Turkey.

WORK EXPERIENCE

2005 – Present	Instructor, Yeditepe University, Department of Foreign Language Education, Istanbul, Turkey
2001 - 2002	Instructor, Marmara University, Department of Foreign Language Education, Istanbul, Turkey
1993 - 1996	Research Assistant, Bogaziçi University, Department of Foreign Language Education, Istanbul, Turkey.
July – September 1994	English Teacher, English for Special Purposes (Tourism English), Bogaziçi University, Istanbul, Turkey.

PUBLICATIONS

Koçoğlu, Zeynep. (1997). The role of gender on communication strategy use. Istanbul: Boğaziçi University. (ERIC Document Reproduction Service No. ED409 725).

Koçoğlu, Zeynep. (1996). Gender differences in the use of expletives: A Turkish Case. Women and Language, 19(2): 30-35. George Mason University, Fairfax: Virginia.

THESES

Koçoğlu, Z.. (2006). The Role of Portfolios in EFL Student Teachers' Professional Development: A Case Study. Unpublished Ph.D. Dissertation, Boğaziçi University, Istanbul, Turkey.

Sunkar, Zeynep. (1997). Sex-based differences in the conversational behaviors of Turkish EFL students: An analysis of communication strategies. Unpublished Master Thesis, Boğaziçi University, Istanbul, Turkey.

CONFERENCE PRESENTATIONS

Koçoğlu, Z. . (1998). Effective Teaching and Its Importance in Classroom Interaction. Paper presented at 5th METU International ELT Conference, May 28-30, 1998, Ankara, TURKEY.

Koçoğlu, Z. . (1996). Getting the Meaning Across: Communication Strategy Revisited. Paper presented at the European Conference on Educational Research, September 25-28, 1996, Seville, SPAIN.

Koçoğlu, Z. . (1996). Gender Differences in the Use of Communication Strategy. Paper presented at the 2nd IATEFL Balkan ELT Conference. September 5-7, 1996, Istanbul, TURKEY.

SCHOLARSHIP

Full Scholarship awarded from Ministry of education to pursue graduate studies in the U.S., September 1990 - June 1993.

PROFESSIONAL ACTIVITES

Member of International Women Club of Moscow 1999

Member of Turkish Women Association of Moscow, 1999 (teaching English)

The Conference Committee in the 2nd IATEFL Balkan ELT Conference organized by IATEFL and Boğaziçi University, September 5-7, 1996

BÜMED Theatre Group performed "Five Women" at Boğazici University, April 1996.

USIS-Summer Institute Workshop, Robert College, Istanbul. Courses taken: Developing listening skills from Dr. Frank Pialorsi; and Content-based curriculum design from Jean Zukowski-Faust,1996.

Attended to 1st National Foreign Language Teaching Symposium at 9 Eylul University, İzmir, Turkey, October 26-28, 1994.

Committee Member of the Turkish Club established at the American University, Washington D.C., U.S.A., 1992.

Assistant-Editor in TURKISH TIMES published in Washington D.C., U.S.A., 1991-1992.

Professional Handball Player, 1985-1988; and Turkish Women National Handball Team Player, 1980-1983.

RESEARCH AND TEACHING INTERESTS

Teacher Training, Instructional Technology, Material Design and Development, Testing, Child foreign language acquisition

ABSTRACT

The Role of Portfolios in EFL Student Teachers'
Professional Development: A Case Study

By Zeynep Banu Koçoğlu

The purpose of this study was to analyze the impact of portfolio preparation on the professional development of student teachers in terms of reflective thinking, technology competency and attitude towards technology use in education.

Five senior students from Boğaziçi University, Faculty of Education, Department of Foreign Language Education participated in this study. Multiple sets of data for this study came from: (a) questionnaires, (b) interviews, and (c) artifacts from pen/paper and electronic portfolios. Collection of data was completed in two consecutive semesters, Fall 2002 and Spring 2003. To answer the 1st main research question that focused on the impact of preparing portfolios on EFL student teachers' professional development, the perspectives of student teachers and their portfolio artifacts were analyzed. In order to find the participants' perspectives about portfolios, a content analysis of the interview transcripts was conducted by

using Miles and Huberman's model (1994) to identify conceptual themes. In order to investigate reflective thinking, portfolio artifacts were analyzed by using Hatton and Smith's (1995) framework of types of reflection to determine how the participants used different types of reflection to describe and justify their behaviors. To answer the 2nd main research question, that is whether use of technology in preparing portfolios affects student teachers' professional development, both pre- and post-technology competency level and technology attitude questionnaires were tabulated and analyzed statistically.

The student teachers stated that the portfolio allowed them to be reflective and to make connections between theory and practice, which helped them think about their strengths and weaknesses in becoming a teacher. The student teachers also felt that during the preparation of portfolios they were able to identify ways to improve their teaching practice. Based on the findings, the data supported Hatton and Smith's view of teachers' reflective thinking as a hierarchical developmental sequence.

The results, overall, showed that the process of preparing a portfolio provided a useful approach to enhancing professional development, with a few negative

comments regarding the time, positive comments regarding the support and collaboration from the peers, its contribution to their professional development in terms of reflective thinking and self-confidence.

In addition, preparing electronic portfolios by using different technological applications also enhanced professional development of student teachers in terms of facilitating technological competence and increasing attitudes positively toward computer use in education.

KISA ÖZET

PORTFOLYOLARIN İNGİLİZCE EĞİTİMİ ANA BİLİM DALI ÖĞRETMEN
ADAYLARININ MESLEKİ GELİŞİMLERİNDEKİ ROLÜ: BİR DURUM
ÇALIŞMASI

Zeynep Banu Koçoğlu

Bu çalışmanın amacı, portfolyo hazırlamanın, yansıtma
becerileri, teknoloji becerisi ve eğitimde teknolojiyi
kullanma tutumu açısından öğretmen adaylarının mesleki
gelişimindeki rolünü incelemektir. Bu çalışmaya, Boğaziçi
Üniversitesi, Eğitim Fakültesi, Yabancı Diller Eğitimi
Anabilim Dalı'ndan beş son sınıf öğrencisi katılmıştır.
Araştırmanın verileri, (a) anketler, (b) görüşmeler,
geleneksel portfolyo ve elektronik portfolyo ürünleri
kullanılarak elde edilmiştir. Bu çalışma, 2002-2003
Akademik yılında yapılmıştır. Portfolyo hazırlanmasının
öğretmen adaylarının mesleki gelişimindeki etkisini
araştıran birinci temel araştırma sorusunu cevaplamak için
öğretmen adaylarının düşünceleri ve portfolyo ürünleri
incelenmiştir. Katılımcıların portfolyolar hakkındaki
düşüncelerini bulmak için, yapılan görüşmelerin tutanakları
Miles ve Huberman (1994) modeline göre incelenmiştir.
Katılımcıların davranış nedenlerini anlattıkları

yansıtmalarının ne tür yansıtmalar olduğu ise portfolyo ürünlerinin Hatton ve Smith'in (1995) geliştirdiği yansıtma kriterlerine göre incelenmesi ile bulunmuştur. Portfolyo hazırlanmasının öğretmen adaylarının teknoloji becerisine ve eğitimde teknolojiyi kullanma tutumuna olan etkisini araştıran ikinci temel araştırma sorusunu cevaplamak için ise teknoloji beceri ölçeği ve teknoloji tutum ölçeği test-tekrar test şeklinde uygulanmış ve sonuçlar istatistiksel olarak incelenmiştir.

Öğretmen adayları, portfolyo hazırlamanın, hem yansıtma becerilerini geliştirmelerine hem de teori ve pratik arasında bir bağ kurmalarına yardım ettiğini belirtmişlerdir. Ayrıca, öğretmen adayları portfolyolarını hazırlarken kendi öğretim uygulamalarını geliştirecek farklı yolları keşfettiklerini de söylemişlerdir.

Genel olarak araştırmanın sonuçları bize, portfolyo hazırlama sürecinin, zaman yetersizliği gibi negatif, ama yardımlaşma ve işbirliği gibi pozitif yönleri ile öğretmen adaylarının mesleki gelişimlerini hem yansıtma becerileri hem de özgüvenlerini geliştirme açısından hızlandıran bir yol olduğunu göstermiştir.

Buna ek olarak, özellikle elektronik portfolyoyu hazırlama sürecinde öğretmen adaylarının hem teknoloji

beceriler hem de teknoloji kullanımına pozitif yaklaşımları artış göstermiş, bu da onların mesleki gelişimlerinde önemli bir rol oynamıştır.

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CHAPTER 1. INTRODUCTION

Background to the Study

In the beginning of 1980s, teacher education programs were based on the assumption that student teachers came to teacher education programs with their own beliefs and knowledge about teaching, which they reconstructed in these programs. Therefore, emphasis was given on the importance of active participation of student teachers in reconstructing their knowledge base. Considering the fact that student teachers' knowledge-base was an important component of the process of learning to teach, teacher education programs started to provide experiences to student teachers in which they reconstruct their own existing knowledge, by first recognizing and reflecting on their personal beliefs and ideas of teaching and then combining them with their teaching practices. This kind of reflective thinking provided different types of experiences to student teachers at different stages of their learning because it involves more than just thinking about a single teaching event. It involves student teachers in reflecting on many aspects of their lives, including their teaching experiences, attitudes and biases, or on the strengths and

weaknesses they may have and may need to be improved (Osterman & Kottkamp, 1993).

Portfolios provide such a reflective experience to student teachers to reflect regularly on their strengths and weaknesses as they progress through their teacher education. In the last several years, teacher educators and researchers have become interested in what role portfolios might play in teacher education (Barton & Collins, 1993; Carroll, Potthoff & Huber, 1996). Teacher educators have reported that the process of developing portfolios can help student teachers better understand the complexities of teaching, make connections between classroom learning and teaching experiences, and become reflective practitioners (Loughran & Corrigan, 1995; Winsor & Ellefson, 1995). With this understanding in mind, it is then necessary that a teacher education program need to put portfolios into practice in order to meet the challenges and needs of current educational practices.

Several factors that contributed to this study were prompted by the literature on portfolio and reflection in teacher education. The first factor was the increasing numbers of articles, which specifically examined portfolio construction, reflection and professional development of

student teachers (Anderson & DeMeulle, 1998; Bartell, Kaye & Morin, 1998a; Bartell, Kaye & Morin, 1998b; Barton & Collins, 1993; Carroll, Potthoff & Huber, 1996; Colton & Sparks-Langer, 1993; 1998; Hatton & Smith, 1995; Hurst, Wilson & Cramer, 1998; Richards & Ho, 1998; Ross, 1989; Wade & Yarbrough, 1996; Wilcox, 1996; Wolf, 1996; Wolf & Dietz, 1998; Zeichner & Liston, 1987; Zubizarreta, 1994). However, all the studies conducted on portfolios in teacher education dealt with portfolio use in science or math teacher education, but there are only two studies conducted on second language teacher education (Antonek, McCormick & Donato, 1997; & Jadallah, 1996). Moreover, there is not even a single study conducted on foreign language teacher education.

The second factor that emerged from the literature was the need to further explore the processes of constructing portfolios by student teachers from their perspectives, and identified the purpose of the portfolio from their own thinking (Borco, Michalec, Timmons & Siddle, 1997; Krause, 1996; Lyons, 1998). The present study has added a different perspective to the research concerning EFL student teachers' perspectives about portfolios as a tool for enhancing reflective thinking as a component of professional development.

The third factor that prompted this study was that in the Department of Foreign Language Education, where the present study was conducted, various course instructors incorporate opportunities for reflective thinking as one of the focuses of assignments of the courses. In this program, during practice teaching period, the student teachers are required to do tasks that aim to engage them in various reflective activities such as reflective papers and discussion sessions where student teachers share their student teaching experiences with their peers and university supervisors. For the past semesters, university supervisors have reported that the reflective papers that the student teachers wrote have been similar to narrative descriptions of events without any attempt to reflect critically about those events. Moreover, in discussion sessions, the university supervisors also complained about student teachers' lack of reflective ability in student teachers' discussion of their practice teaching experiences. Since student teachers were experiencing difficulty in reflection, perhaps more opportunities for enhancing reflective thinking should be provided in the teacher education program by implementing portfolios systematically within undergraduate curriculum.

Purpose of the Study

The purpose of this study was to gain deeper insight
of the role that the portfolio played in EFL student
teachers' professional development as future language
teachers. Specifically, the study tried to describe
portfolio construction as a process for facilitating
reflective thinking of student teachers enrolled in the
Department of Foreign Language Education at Boğaziçi
University.

In addition, the researcher wanted to understand
better how additional use of technology in constructing
portfolios could foster EFL student teachers' professional
development in terms of technological competence and
attitudes toward the use of computers in teaching. This
study, therefore, seeks responses to the following main and
sub-research questions:

1- In what ways does preparing portfolios influence
EFL student teachers' professional development?

(1a) Is there a difference in student teachers'
professional development at the beginning and at the end of
the portfolio preparation in terms of reflective thinking?

(1b) Is there a difference in student teachers'
professional development as compared by pen/paper portfolio

and electronic portfolio preparation in terms of reflective thinking?

(1c) What are the perspectives of the student teachers regarding the impact of portfolio preparation on their professional development?

(1d) What are the perspectives of the student teachers regarding the impact of portfolio preparation as compared by pen/paper portfolio and electronic portfolio preparation on their professional development?

2- In what ways does use of technology in preparing portfolios affect EFL student teachers' professional development?

(2a) Are there any differences between student teachers' technology competency levels before and after the electronic portfolio preparation?

(2b) Are there any differences between student teachers' attitudes on using technology in the classroom before and after the electronic portfolio preparation?

Theoretical Framework of the Present Study

In recent years, the constructivist approach has become an underlying principle of many teacher education programs (MacKinnon & Scarff-Seatter, 1997; Richardson,

1997). The main principle of constructivist learning

theory is the idea of creating knowledge through experience

(Fosnot, 1996), and its emphasis is on the learner's active

participation in knowledge construction instead of the

passive acquisition of knowledge (Brown, Collins & Duguid,

1989; Fosnot, 1996; Von Glasersfield, 1995). In other

words, it is the general belief of constructivists that

individuals construct meanings by combining their

experiences with previously constructed knowledge as they

interact with the environment. The constructivist theory

has several implications for teaching. First, research

suggests that learning cannot occur when the teacher

directly transmits the knowledge to the students, but

learning can take place when the teacher rather becomes a

guide for the student who provides opportunities for

students to experiment with the knowledge they currently

have. Second, if students come with some already existing

knowledge, then the teacher needs to provide different

learning situations in which students understand the

difference between what they have already known and the new

experiences. Therefore, the teacher must provide

opportunities for students to engage in new situations to

form new ideas (Ediger, 2000; Rakes, Flowers, Casey &

Santana, 1999; Trube & Madden, 2001). Preparing a

portfolio is one of the opportunities that student teachers actively reconstruct their knowledge as indicated in the constructivist theory.

Growing evidence supports the argument that portfolios have the potential to support knowledge construction. Constructivism frames learning as a process in which learners actively construct their own knowledge (Dana & Tippins, 1998). Hunter (1998) illustrated that the process and production of a portfolio overlaps with a constructivist view of learning because prospective teachers are actively challenged to build a personal interpretation of their teaching and to learn how and when to improve their practice. Similarly, Freidus (1998) argued that the theory behind portfolios is consistent with a basic Deweyan idea that learning involves an experiential continuum in which new knowledge is built up and mediated by prior knowledge.

Shaklee, Barbour, Ambrose & Hansford (1997) also suggested that the constructivist theory can be found in portfolios in the following ways: a) students learning by interacting with their environment, b) students having a basic need to make meaning out of their experiences, c) students needing to be actively involved with resources and

ideas; d) students merging new ideas with the old ideas and new experiences, e) students being aware of what they already know and understand and beginning to build new learning and f) students engaging, examining, discussing and learning about new ideas and concepts in large, small and individual groups (p.14). Use of portfolios in education, thus, are grounded in the constructivist theory, which suggests that learners construct new meanings in regard to what they already know.

Overview of Methodology

A single-case study design is adopted in order to provide a detailed description of an educational phenomenon (i.e., portfolios). Furthermore, this design allows the researcher to gather in-depth data regarding portfolios. The participants in this study were 4th year student teachers enrolled in the Department of Foreign Language Education. Five student teachers volunteered to participate in this study.

Triangulation of data is achieved by collecting data from different sources: pre- and post-interviews, pre- and post-attitude questionnaires, pre- and post-technology competency questionnaires and artifacts from pen/paper and electronic portfolios including teacher narratives and

electronic journals. Each student teacher was interviewed concerning preparation of both pen/paper and electronic portfolio before and after the completion of the portfolio by the researcher. Two questionnaires were administered to student teachers before they started to prepare their portfolios. After they completed their portfolios, they were given the same questionnaires. The purpose of these post-questionnaires was to investigate whether there were any changes in student teachers' attitudes towards technology use in the classroom, and whether the electronic portfolio enhanced their technological competency.

The artifacts came from the portfolios each participant prepared. They prepared their pen/paper portfolios in the 1st and 2nd semester. In addition, they also prepared their electronic portfolios in the second semester along with their 2nd pen/paper portfolios.

A combination of qualitative and quantitative strategies was used for data analysis to ensure internal validity. The raw data came from questionnaires, transcriptions of audio taped interviews, pen/paper portfolios, computer printouts of electronic portfolios and electronic journals.

To answer the *1ˢᵗ main research question*, that addressed the impact of preparing pen/paper and electronic portfolios on EFL student teachers' professional development, all interviews were transcribed, and coded by using Miles and Huberman (1994) model to find out the perspectives of student teachers. Then, first and second pen/paper portfolio and electronic portfolio artifacts were compared. Additionally, to analyze reflective thinking, portfolio artifacts were examined by using a reflection-coding scheme based on Hatton and Smith's (1995) framework.

To answer the *2ⁿᵈ main research question*, that is whether use of technology in preparing electronic portfolios affects student teachers' professional development in terms of technological competence and attitudes, the interview transcripts were analyzed by using Miles and Huberman (1994) model. Furthermore, both pre- and post-technology competency level, and pre- and post-attitude questionnaires were tabulated and analyzed statistically.

Contributions of the Study

Portfolios have recently received increasing attention as tools to promote reflection among both experienced and novice teachers. Theoretical support for portfolio as a

tool to promote professional development and reflective thinking is strong as discussed before. However, all the studies conducted on the use of portfolios in teacher education dealt with portfolio use in science or math teacher education, but there are only two studies done in the context of second language teacher education (Antonek, McCormick & Donato, 1997; Jadallah, 1996). Therefore, this study was the first study done on portfolio use in foreign language teacher education, and added a different perspective to the research concerning portfolios as a tool for enhancing professional development in language teacher education.

Organization of the Study

This dissertation consists of five chapters. In Chapter I, an introduction to the study is given by presenting problem statement, research questions, overview of data collection and analysis procedures, and operational definitions. Chapter II presents review of related literature in different sections. The first part of the literature review looks at the learning theories overall, then constructivist-learning theory is discussed in detail since it is the theoretical framework for the design and development of portfolios in the present study. The second

part reviews the literature related to the current uses of portfolios in teacher education with an emphasis on reflective thinking in teacher education. Chapter 3 presents the methodology of the study; i.e., the research design, setting of the study, project description, project participants, data collection and analysis procedures. Chapter 4 presents the findings of the research. Chapter 5 discusses the results of the study with its implications, limitations and future suggestions.

Definitions of Terms

Student teacher: a university student who is enrolled in a teacher education program to practice and learn the methodology and skills of teaching; also referred to as preservice teacher, teacher candidate or teaching intern.

Reflective thinking: is defined here as a process in which student teachers cross-examine their teaching practices, asking questions about their effectiveness and about how they might be improved to meet the needs of the learners.

The development of reflective thinking: is defined not only as a change, but also as the evolution and integration of more complex ways of engaging in a critical examination of one's teaching practices.

The student teacher's professional development: is defined as changes over time in the behavior, knowledge, beliefs or perceptions of student teachers. In this study, reflectivity was taken as a sign of student teacher's professional development.

The portfolio: is a collection of work representing a student teacher's professional experiences and development over a period of time.

Electronic portfolio: is the collection of student teacher's work electronically through the capture and storage of information in the form of text, graphics, sound, and video.

CHAPTER 2. REVIEW OF THE LITERATURE

Presentation

The review of literature for the present study is
divided into several sections. First, theories of learning
and their implications to teacher education are described.
Second, the paradigm shift in second and foreign language
education from behaviorism to constructivism is discussed.
Third, research on reflective thinking and its relation to
teacher education programs is presented. Finally, the use
of portfolios in enhancing reflective thinking as part of
professional development in teacher education programs will
be explored in detail.

Theories of Learning and Teacher Education

The teaching profession is continually evolving and
changing; these changes ranging from minor adjustments to
complete paradigm shift have been an important issue
throughout the history of teacher education. Prior to the
mid-1970s, a process-product paradigm –behaviorism-
dominated the field of education. Starting in the mid-
1980s, a new body of educational research began to develop
that challenged behaviorism –constructivism. In the next
section, the behaviorist learning theory in terms of its
underlying principles and its implications to teacher

education will be discussed first. Then, constructivist learning theory will be discussed in detail since it is the theoretical framework for the development of portfolios in the present study.

Behaviorist theory of learning

Early psychologists, in the last decades of the 19th century, tried to bring scientific evidence in their research, so they focused on human behavior rather than human mind because it was measurable. Basically, they believed that knowledge and facts existed within the real world, and could be discovered by experiments in which conditions were controlled and behaviors could be observed and measured scientifically.

B.F. Skinner was known as the founder of behaviorism who defined learning in terms of *operant conditioning*; a human responds to a stimulus by behaving in a particular way (Skinner, 1961). If the behavior is rewarded or punished, the occurring of that particular behavior will be increased or decreased. Therefore, from the behaviorist point of view, the goal of learning and teaching is to reach the predefined behavioral objectives for mastery learning, which has focused on memorization of knowledge through sequenced instruction. In other words, this theory

views learning and teaching as breaking down global learning targets into clearly defined sub competencies.

Implications for teacher education

The effect of the behaviorist learning theory in the area of teacher education was obvious in its conceptualization of knowledge. A training model was proposed for teaching student teachers: a teacher educator presented and taught "accepted" behaviors and techniques to the student teachers, and it was assumed that through intensive practice, student teachers learned skills from this model. Based on these ideas, the behaviorist theory in teacher education offered an approach to curriculum design in which the content of the course was seen as an "inventory of discrete behavioral skills (Roberts, 1998, p.14). Teacher training can be achieved by breaking knowledge and skills down into subcategories, and by transmitting these knowledge chunks to student teachers. Within this framework, teaching was conceptualized as "a set of discrete behaviors, routines or scripts drawn from empirical investigations of what effective or expert teachers did in practice (Freeman & Johnson, 1998, p. 399). Classical microteaching and competency-based teacher education are based on this view.

In the classical microteaching program, a target behavior is chosen as a model, and presented to the student teachers. Student teachers' behaviors, then, are shaped according to this single model by observing, imitating and giving feedback. It is assumed that by reinforcement, the student teachers' teaching behaviors progressively reach acceptable standards (Wallace, 1991). Competency-based teacher education is mainly an object-driven approach to teacher training which is characterized by its emphasis on objectives specified before and known to the student teacher (Wallace, 1991).

Researchers have criticized behaviorist theory (Gunstone & White, 1981; Gow & Kember, 1990; Roberts, 1998; Wallace, 1991) on the grounds that behavioral instruction does not enhance meaningful learning since it predetermines certain behaviors to be acquired. As a result, learners cannot think critically, make inferences or solve problems. In addition, they criticized its dependence on imitation as a learning process. With these criticisms in mind, the paradigm of teaching and learning has been shifted from behaviorist to constructivist theory of learning.

Constructivist theory of learning

Constructivism has evolved from the thinking of philosophers and educational researchers such as Rousseau, Dewey, Piaget, Bruner and Vygotsky (Marlowe & Page, 1998). Constructivist educators focus on the process of knowledge construction rather than predetermined instructional sequences and outcomes of learning emphasized in the behaviorist approach. Rather, they are concerned with learners constructing their own knowledge in such a way that is personal to them. Thus, the main focus of the constructivist learning theory is the idea of creating knowledge through experience with its emphasis on the learner's active participation in knowledge construction instead of the passive acquisition of that knowledge (Brown, Collins & Duguid, 1989). Von Glaserfeld (1995) argued that "from the constructivist perspective, learning is not a stimulus-response phenomenon. It requires self-regulation and the building of conceptual structures through reflection and abstraction" (p.14). Fosnot (1996) also adds that "rather than behaviors or skills as the goal of instruction, concept development and deep understanding are the foci" (p. 10). Learning can only happen if the teacher provides the learners with various experiences to use that knowledge. In order to achieve this, the teacher

should provide authentic, interesting and creative activities, which will lead to better learning (Black & Ammon, 1992; Zahorik, 1995).

The term *constructivism* has been used as an umbrella term for a diversity of views (Duffy & Cunningham, 1996). There are two major theoretical positions that define constructivism as a theory of learning. One perspective on constructivism, -cognitive constructivism- is the psychological view of Piaget, which suggests that knowledge is constructed by individuals based on their interactions with their environment. Another perspective is that of social constructivists, such as Vygotsky and Von Glaserfeld, who view culture and social interaction as essential to knowledge construction of individuals.

Cognitive constructivism. Sometimes referred to as *critical constructivism*, this view is consistent with Piaget's view of learning. Basically, Piaget (1970) theorized that knowledge grows, and we are always in a process of constant evolution. He describes learning as the process of continually re-constructing our knowledge to take our past experiences into account. As we interact with our environments, we come across experiences that are inconsistent with our constructed knowledge. We process

new information into our system: when it is consistent with our pre-existing schema, it will be assimilated; when it is inconsistent with our pre-existing schema it will be accommodated. Assimilation is the adoption of new information that fits into a pre-existing view. Accommodation is the change in response to environmental pressures resulting in the adoption of a new view.

The purpose of education, according to cognitive constructivist view, is educating the learner in a way that supports his/her interests and needs; consequently, the learner is the subject of the study, and his/her cognitive development is the focus. This is a learner-centered approach that tries to identify the natural path of cognitive development. This approach assumes that the teacher helps the learners to reconstruct their knowledge by giving them challenging problems. Knowledge construction occurs as a result of solving these challenging problems. Such tasks may include discovery learning, hands-on activities, or tasks that challenge existing concepts and questioning techniques that investigate learners' beliefs.

In summary, based on this view, teachers need to provide learning environments that focus on inconsistencies

between the learners' current understandings and the new experiences they come across. This approach assumes that development is pretty much the same for all individuals, regardless of gender, class, race, social or cultural context. Cognitive development is the focus of the teaching environment; however, the social and cultural factors in the learning environment are not taken into consideration.

Social constructivism. Lev Vygotsky who was a cognitive psychologist too, shared many of Piaget's ideas about how people learn, but he also emphasized the social and cultural factors in learning (Vygotsky, 1978). Social constructivism assumes that we actively construct meanings socially through language. In other words, knowledge is constructed in the context of the environment in which it is encountered through a social and collaborative process using language.

Based on the premise that knowledge construction is a socio-linguistic process based on the content and culture where it occurs, this view argues that we use conversational language to negotiate meanings that results in mutual understanding. The process of negotiating meanings is how we construct knowledge. But - although we

construct our knowledge socially and collaboratively

through dialogue - no two people will have exactly the same

conversation with exactly the same people. This view

acknowledges that multiple realities exist and it is

possible for us to have mutual understandings that are

negotiated through conversation.

Williams (1989) discussed the difference between

cognitive constructivism and social constructivism:

> Where cognitive theories move to the interior of the
>
> mind (what was going on to mediate stimulus and
>
> response), Vygotskian theory moves to the context of
>
> behavior, to the social situation within which the
>
> action takes place. . . In this view, cognitive
>
> abilities and capacities themselves are formed and
>
> constituted in part by social phenomena. (p. 109)

In sum, according to Piaget, biological maturity is

the main condition for learning; whereas according to

Vygotsky, culture gives the child the cognitive tools

needed for development. The tools the culture provides a

child include language, history, social context and

interaction with people. However, the common denominator

of these two different definitions of constructivism is

that knowledge is "constructed" by the learner (Black &

Ammon, 1992; Duffy & Cunningham, 1996; Fosnot, 1996; Marlow & Page, 1998; Richardson, 1997; The Cognition and Technology Group at Vanderbilt, 1993; Zahorik, 1995). Overall, the major principles of constructivist learning theory can be summarized as follows: (1) Learners bring their own prior knowledge, experience, and interests to the learning situation; (2) Knowledge is constructed and situated in multiple ways, through a variety of mediums within a context and (3) Social interaction introduces multiple perspectives through collaboration, negotiation and reflection.

Implications for teacher education

In recent years, many teacher educators have described ways in which these constructivist principles provide a framework for teacher education programs to foster student teachers' thinking and professional development (Black & Ammon, 1992; Fosnot, 1996; Richardson, 1997). According to Kaufman (1996), the constructivist teacher education mainly offers student teachers (a) autonomy for their own learning, (b) opportunities for peer collaboration, (c) time for self-observation and evaluation, and (d) outlets for reflection. Autonomy encourages student teachers to construct their own knowledge and gain hands-on experience

in practice teaching where they collaborate with cooperating teachers. In addition, opportunities for peer collaboration and support must be created in teacher education programs in order to provide different perspectives on teaching and learning processes. Self-observation and evaluation activities allow student teachers to analyze their own performance as future teachers. Finally, reflection encourages student teachers to incorporate new ideas into their own teaching as well as to combine experience (action) and thought (reflection) to build meaning. Hence, student teachers' construction of knowledge both through personal reflection and through engaging in conversation with others formed the basis of the process of learning to teach.

According to constructivism, understanding occurs through interaction with the environment. What is learned cannot be separated from how it is learned, suggesting that knowledge is not just within the individual, but part of the context. Based on these assumptions, the emphasis in education is on the importance of helping student teachers "engage in argumentation and reflection as they try to use and then refine their existing knowledge as they attempt to make sense of alternate points of view (The Cognition and Technology Group at Vanderbilt, 1993, p. 6).

As knowledge is constructed through social negotiation, discussions with other individuals are a primary instructional methodology because learners should be encouraged to test their ideas against alternative views. Therefore, educators should include activities that enhance learners' confidence and ability to express themselves. For instance, journaling is an example of an instructional activity that facilitates the process of internalizing dialogue to strengthen the skill of reflecting (Reinersten & Wells, 1993). Finally, if knowledge is actively constructed, then educators must have the learners "do something"; that is, create a product such as portfolios. The products that learners create must be meaningful, challenging experiences that involve planning and development over time.

Second and foreign language teacher education is an interdisciplinary field including many different disciplines such as linguistics, psycholinguistics, sociolinguistics and education. As a result of such diversity, "there is no general consensus on what the essential knowledge base or conceptual foundation of the field consists of" (Richards, 1998, p.1).

Reviewing the literature on language teacher education, Lange (1983) expressed concerns for the future of the field. He indicated that the preferred approach to research was mainly descriptive, focusing on effective teaching behaviors. Such a behaviorist view represented a tradition that shaped the nature of second and foreign language education until the mid 1980s (Freeman & Johnson, 1998). Afterwards, the paradigm shift that occurred in the field of education reached to the field of language teacher education. It was not until the 1980s that the theories and practices of language teacher education began to be examined. As Freeman (1996) said:

> There has been the need to study, to understand, and in a sense to define, *teaching* independent of its outcomes; this includes coming to understand the role and person of the teacher, the place of language as subject matter, and the role of diverse contexts and learners. There has been a parallel need to study *teacher education* as the means of developing in teachers the capacity to teach. Since teaching is the subject matter of teacher education, and teachers are its learners in that context, the two challenges are intertwined both conceptually and methodologically (p. 360).

The field of language teacher education needed a constructivist framework through which teachers' knowledge and beliefs could be analyzed. As will be discussed in the following section, reflective thinking provides such a constructivist framework.

Reflective Thinking and Teacher Education

The paradigm shift from behaviorism to constructivism has redefined the role of teacher education as discussed previously. The idea that student teachers come to teacher education programs as "empty vessels needed to be filled with knowledge" has been replaced with the idea that student teachers have beliefs and experiences which play an important role in the process of learning to teach. Such change has led to a notion known as "reflective thinking".

The ability to engage in reflective thinking has been widely addressed in the literature as one of the most important activities associated with teaching. As Dewey (1933) stated, "Reflection is an active, persistent, and careful consideration of any belief or supposed form of knowledge in light of the grounds supporting it and future conclusions to which it tends" (p. 6). Engaging prospective teachers in thoughtful reflection has been identified as playing an important role in learning to

teach (Yost, Setner, & Forlenza-Baily, 2000). Many studies have been reported regarding the need for reflective thinking in teacher preparation programs (Dana & Tippins, 1998; Dewey; 1933; Dollase, 1996; Schon, 1983). It is increasingly common for teacher education programs to provide a reflective pedagogy in which prospective teachers are encouraged, through a variety of strategies, to develop a critical understanding of their practice and their conceptions of it (Dana & Tippins, 1998).

As noted by Zeichner and Liston (1996), early in the 1900's John Dewey "was one of the first educational theorists in the United States to view teachers as reflective practitioners, as professionals who could play very active roles in curriculum development and educational reform" (p.8). Dewey defined reflective thinking as "active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusions to which it tends" (Dewey, 1933, p.43). He further suggested that the development of reflection involved certain attitudes such as open-mindedness, responsibility, and whole-heartedness. Open-mindedness is the desire to listen to other points of view, recognizing the possibility that one's own view may be wrong. Responsibility involves

careful consideration of the consequences of the actions. Finally, wholeheartedness is the analysis of one's beliefs with the attitude that he can learn something new.

Donald Schön (1983, 1987) further developed Dewey's concept of reflection, and explained that teachers improve their teaching through continuous reflection on their practice and through their interactions with students. He indicated that through these reflections teachers could begin to develop a level of understanding about what they are as teachers. Thus, he emphasized the importance of reflection as a means to examine the practitioner's implicit knowledge, or "knowing-in-practice". Through the process of reflection, a practitioner "can surface and criticize the tacit understandings that have grown up around the repetitive experiences of a specialized practice, and can make new sense of the situations of uncertainty or uniqueness which he may allow himself to experience" (p.61).

Reflection, according to Schön, occurs in two time frames: "reflection-on-action" (i.e., reflection that occurs before and after the action) and "reflection-in-action" (i.e., reflection that occurs during the action). *Reflection-on-action* occurs when a teacher plans a lesson

and when a teacher considers what has happened after the lesson. It involves focused reflection on an event, action or person, which is then examined from different perspectives. *Reflection-in-action* occurs for a teacher during the performance of the actual teaching. Schön (1987) defines reflection-in-action as follows:

> Reflection-in-action is a reflective conversation with the materials of a situation. Each person carries out his own evolving role . . . 'listens' to the surprises ('backtalk') that result from earlier moves, and responds through online production of new moves that give new meanings and directions to the development of the artifact. (p.31)

Van Manen (1977) further defined reflection as a "form of human experience that distances itself from situations in order to consider the meanings and significance embedded in those experiences" (p.512). He identified three levels of reflection. The first level, *technical reflection*, is concerned with the efficiency and effectiveness of the means to achieve certain ends. He defined this level as "application of educational knowledge and of basic curriculum principles for the purpose of attaining a given end" (p.126). The second, *practical reflection*, allows for

open examination not only of means, but also of goals. Practical reflection focuses on "an understanding both of the nature and quality of educational experiences and of making practical choices" (p.227). The third level, *critical reflection* also calls for considerations involving moral and ethical criteria into the discourse about practical actions. It is the highest level of reflectivity which addresses "the world of knowledge and the nature of the social conditions necessary for raising questions of worthwhileness in the first place" (p.227).

Zeichner and Liston (1996) further defined "reflective thinking" through an examination of the type of thinking in which the teacher engages. They compared technical teaching with reflective teaching such as "the teacher as reflective practitioner" versus "the teacher as technician." The teacher as reflective practitioner suggests that teaching involves "the critical examinations of experiences, knowledge and values, an understanding of the consequences of one's teaching, the ability to provide heartfelt justifications for one's beliefs and actions and a commitment to equality and respect for differences" (Zeichner & Liston, 1996, p.48). On the other hand, "the teacher as technician" does not examine the context of the

classroom, or student backgrounds or their beliefs; he/she makes decisions based on the fixed assumptions.

Wallace (1991) built his reflective model on Schön's idea of reflective practitioner, and offered a framework for teacher education, which "seeks to present a coherent rationale of current good-teacher education practice (p.3). His framework offered a model for reflective practice as a key to connecting theory to practice and supporting ongoing teacher development. He said that professional competence could be achieved in three stages: Stage 1, or *the pre-training stage*, reflects the education level and life experience that a person has before beginning professional teacher education. Stage 2, or *the stage of professional training*, is the stage in which teachers receive professional education. Two key elements, "received knowledge" and "experiential knowledge" are seen in this stage. The term "received knowledge" refers to the idea the facts, theories and content knowledge that a professional must have in order to "be informed in the field." "Experiential knowledge" is the knowledge gained by professional action and practical knowledge, and is "at the very core of the reflective model" (p. 52). Knowledge is received by observation in the classroom, and practice teaching, which are used as the context for reflection and

professional growth. Stage 3, or *the stage of*

"*professional competence*" for teachers, represents first

achievement of competency goals and also sets the stage for

teachers to continue to develop their knowledge and

practice.

As shown above, the definitions of reflection are very

diverse. However, regardless of the form of any

definition, the general agreement is on the importance of

active and careful examination of one's thoughts in order

to improve one's teaching. The main common issue in these

definitions is Dewey's argument that reflection tries to

move teachers away from the idea of having one best way of

teaching towards considering various teaching strategies.

Therefore, giving student teachers multiple opportunities

to engage in reflective thinking is crucial to their

development. How this is implemented in teacher education

programs varies greatly, and the research on reflective

thinking differs in types of reflective experiences that

are investigated.

Research on reflective thinking in teacher education

There has been an abundance of literature written

about reflective thinking in teacher education (Adler,

1991; Calderhead & Gates, 1993; Canning, 1991; Colton &

Sparks-Langer, 1991; Gore & Zeichner, 1991; Hatton & Smith, 1995; Smyth, 1989; Tabachnick & Zeichner, 1991; Zeichner & Liston, 1996). However, empirical research which examined the benefits of using various instructional strategies to help student teachers reflect on their teaching, were very few. Therefore, as Clarke (1995) pointed out "if reflective practice is to be an important aspect of the practicum, student teachers should be provided with opportunities not only to practice teaching but also to theorize about the practice" (p. 259). Teacher preparation programs have explored a number of approaches for attempting to support prospective teachers' reflection and learning. such as action research (Ross, 1989), dialogue (Britzman, 1992; Lee & Loughran, 2000; O'Donoghue & Brooker, 1996), writing activities (Richards & Ho, 1998; Ferguson, 1989; Hatton & Smith, 1995), teacher narratives (Canning, 1991), and portfolios (Anderson & DeMeulle, 1998; Antonek, McCormick & Donato, 1997; Bartell, Kaye & Morin, 1998; Guiliano, 1997; Jadallah, 1996; Lyons, 1998; Stone, 1998; Wade & Yarbrough, 1996).

   Ross (1989) at the University of Florida investigated the impact of an action research course on elementary teacher education students' reflection. The study required each student do action research projects. Their projects

were rated using a rubric assessing the reflective skills used in the writing paper. Levels were from low description with little analysis, to high multiple perspectives with recognition of teacher impact. Ross suggested that reflective skills improved progressively through intensive dialogues that helped student teachers understand both the immediate and long term ethical and moral aspects of their work. Furthermore, using action research methods engaged student teachers in describing and analyzing their efforts to be reflective.

Britzman (1992), O'Donoghue and Brooker (1996) and Lee and Loughran (2000) investigated the role of social interaction within teacher education programs. They discussed the role of dialogue, a specific form of social interaction, as a way to promote reflection. A larger ethnographic study of a student teacher named Jamie Owl was conducted. Throughout Jamie's practice teaching, a four-month period, the author and the student teacher met for weekly interviews lasted almost two hours to find out how Jamie, herself, understood the process of learning to teach. The researcher realized that Jamie did not assume a teaching identity; rather, her process of learning to teach was defined by the difficult process of inventing her identity:

In actuality, role and function are not synonymous with identity; whereas role can be assigned, the taking up of an identity is a constant social negotiation. One must consent to an identity. There is a distinction between learning to teach and becoming a teacher. Indeed, the significant albeit hidden work of learning to teach concerns negotiating with conflicting representations and desires. One must search out how multiple interpretations of the meanings of social experience come to position one's identity as a teacher. This involves scrutiny into how we come to know ourselves when we are trying to become a teacher. (Britzman, 1992, p. 24)

Furthermore, Britzman also found that the questions the researcher asked encouraged Jamie to reflect and to reconstruct her image of herself as a teacher. Thus, based on the insights gained during the interviews with Jamie Owl, Britzman defined learning to teach as a journey that begins and develops as teachers reflect upon who they are and construct their "teaching voice from the stuff of student experience" (p. 24). In sum, she (1992) found that dialogue encouraged self-reflection and identity formation.

The study conducted by O'Donoghue and Brooker (1996), however, disconfirmed Britzman's results. This study done at an Australian university, "investigated the importance of supervisors promoting reflection in their pre- and post-practice teaching meetings with student teachers" (p. 103). Through interviews and non-participant observations of six supervisors the researchers found that despite the fact that the university promoted a strong commitment to the development of students' reflective abilities, the supervisors actually did not know the meaning of "reflective abilities." Therefore, the supervisors failed to encourage their students' reflection beyond a very limited level of "technical reflection" (p.107).

Lee and Loughran (2000) conducted a study to uncover six student teachers' reflection in a nine-week school-based teaching practicum. The methodology used in this study was an interview-video-interview cycle, which involved pre-lesson and post-lesson interview, and while-viewing video interviews conducted after lessons. All interviews were open-ended and semi-structured. The major findings were: (1) reflection was encouraged by issues and concerns, which changed over time; (2) student teachers' reflection was facilitated by the content of the program, opportunities and support available to them. They

concluded that student teachers were able to learn about, and learn through, reflection in a school-based context.

Studies also have examined the use of various types of writing activities as a means to encourage reflection. Richards and Ho (1998), for instance, examined whether journal writing promoted reflective thinking of inservice teachers completing an MA TESL degree. Thirty-two secondary school teachers in Hong Kong participated in this two-year part-time program. However, the research was carried out only in the first semester. During this time, the participants were asked to reflect on their teaching and examining teacher belief systems by writing journals. They were also asked to write two or three reflective questions at the end of each journal entry. The journals were then examined to determine whether or not the teachers had gone beyond writing as a procedural level to a higher level of reflective thinking (e.g., focusing on details rather than on global issues). The journal data was analyzed according to Bartlett's (1990) five stages of reflective thinking. Each stage asked the following questions: (1) Mapping: What do I do as a teacher? (2) Informing: What is the meaning of my teaching? What do I intend? (3) Contesting: How did I come to be this way? How was it possible for my present view of teaching to have

emerged? (4) Appraisal: How might I teach differently? and (5) Acting: What and how shall I teach?

The results of the study showed that only twenty-percent of the journals examined included example of reflective thinking, and no clear development pattern of critical reflection was found. But, the researchers noted that the majority of teachers found the experience useful (71%). Also, some of them mentioned that this activity might not have affected their teaching greatly because of the short duration, two-months. Therefore, Richards and Ho indicated that even though the journal writing method encourages reflection, the method itself did not necessarily promote critical reflection. They concluded that teachers must be provided with initial training in reflective writing.

Like Richards and Ho (1998), Ferguson (1989) also analyzed what types of writing activities promoted reflective thinking of student teachers completing a methods course and practice teaching. Richards and Ho study was general in nature; thus, the student teachers were asked to reflect on their teaching practice; but Ferguson study was more specific; he wanted to analyze how reflective thinking could be used to close the gap between

theory and practice. During the first three weeks of the methods class, the student teachers responded to a questionnaire, a 20-item semantic differential scale and reacted to assigned readings. The final activity was writing a reflective narrative on the various issues discussed in the class. After this initial phase, they were introduced to the knowledge-base through instructional theory and demonstration lessons. Next, the student teachers completed their field experience in local schools. During this training period, they were asked to write reports for each of their visits to schools, and developed lesson plans. During the last weeks of the course, they returned to the university and completed the questionnaire, and the 20-item semantic differential scale. They were asked to write a narrative statement relating their practice teaching experiences to the current philosophies of social studies. At the end of the semester, the researcher read the reports and met with the students to discuss their experiences.

Ferguson found that the students achieved to combine theory with practice during their practice teaching, and that the "degree of transfer from the methods course to student teaching had not been evident in previous semesters with the more traditional methods" (p. 39). Also, he

analyzed the degree of reflectivity accomplished by the students by using Van Mannen's level of reflective rationality. It was found that the student teachers performed reflection at the second level, practical action, (i.e., a concern for clarifying assumptions underlying pedagogical goals and assessing the educational consequences).

Hatton and Smith (1995) investigated the nature of reflection in teaching to find out specific types of reflection and to determine the extent to which writing tasks encouraged reflective thinking. The participants were teacher education students undertaking a four-year secondary Bachelor of Education degree at the University of Sydney. They were introduced different types of strategies to promote reflection such as written reports where they reflected upon the factors that had influenced their thinking and action, and self-evaluations where they analyzed their own educational philosophies. After analyzing the written data, Hatton and Smith (1995) identified four types of writing: (1) descriptive writing, (2) descriptive reflection, (3) dialogic reflection and (4) critical reflection.

Descriptive writing was characterized by its lack of reflection; it is descriptive mainly. The other types of writing, on the other hand, represent types of reflection that are different in nature of reflection; descriptive reflection provides reasons or justification for actions; dialogic reflection involves a type of discourse with one's self; and critical reflection is characterized by its consideration of social, cultural or political contexts. Between these three types of reflection, the researcher found that descriptive reflection was evidenced highly (60-70%) in the writing reports of the student teachers. Based on these findings, Hatton an Smith proposed an operational framework that views reflection as a hierarchical developmental sequence, "starting the beginner with the relatively simplistic or partial technical type, then working through different forms of reflection-on-action to the desired end point of a professional able to undertake reflection-in-action" (p.45).

The teacher narrative is also another method of developing reflective thinking like action research or dialogues. Teachers write their stories such as their educational philosophies or their beliefs about teaching and learning to gain a clearer understanding of their ideas

about what a good teacher and a good learner is because as Cochran-Smith and Lytle (1990) suggested

What is missing from the knowledge base of teaching, therefore, are the voices of the teachers themselves, the questions teachers ask, the ways teachers use writing and intentional talk in their work lives, and the interpretive frames teachers use to understand and improve their own classroom practices. (p.2)

Canning (1991) described a study at the University of Northern Iowa on student teachers developing their own professional voice through teacher narratives. This process involved looking for connections and conflicts with information gathered from others and their own observations about learning, learners, curriculum and instruction. Next, the participants were to examine how these topics were related to their professional belief systems. This was presented each week in a written reflective assignment. The instructor read and gave feedback. As participants indicated, the feedback helped student teachers to see themselves as teachers. According to Canning (1991), teacher narratives have three main advantages in encouraging reflectivity. First, they give insights into the complexities of a teacher's day and the motivations of

a teacher's actions. Second, teachers gain insights

because of their self-inquiry. Third, teacher narratives

provide rich source of data for teachers where they related

their own beliefs to their problems in the teaching.

In summary, all these studies reviewed above have

shown the importance of reflectivity in student teachers'

professional development, and examined different ways of

enhancing reflective thinking in teacher education.

Another primary tool for developing reflective thinking is

the use of portfolios. Bird (1990) stated that very little

support is given to teachers to encourage them to observe

and reflect upon their teaching. He suggested that

portfolios are a logical vehicle for this type of activity

because they provide a systematic, continuous way of

planning, supporting and monitoring a teacher's

professional advance (p. 244). A number of other studies

also suggest that portfolio development may be a useful

tool for supporting thoughtful reflection (Dana & Tippins,

1998; McKinney, 1998; Zembal-Saul, 2001, Wade & Yarbrough,

1996). Through the portfolio development, prospective

teachers reflect on their experiences, interrogate their

practices, understand their effects on students, and shape

their practices (Lyons, 1998a). Since portfolio as a

reflection tool was the main focus of the present study,

research on the use of portfolio in teacher education will be reviewed in detail in the next section.

Reflective Thinking and the Use of Portfolios in Teacher Education

The process of reflection of one's own experiences through portfolios has been found to foster professional development by encouraging teachers to be reflective about their practices (Freeman, 1998; Freidus, 1998; Brown & Irby, 1997). Vavrus & Collins (1991) found that when the contents of the portfolio were accompanied by reflective explanations, the complexity of teaching appeared to be captured:

> Teachers engaging in the process of portfolio development appeared to become more reflective about their teaching practices, "particularly in terms of critiquing the effectiveness of instructional methods in addressing individual student's needs" (p. 24).

Other researchers also claimed that portfolios "allow for self-directed work, self-correction, greater autonomy and greater time frames" and that they "create an 'ambiance' that promotes self-reflection by the teacher.

This documentation also fosters reflective thinking"
(Lengeling, 1996, p.5-6).

In recent years, the notion of a "portfolio" has
become easily recognizable as a part of the everyday
language. The word "portfolio" can mean anything such as a
scrapbook of personal items, stuffed file of drafts, or
carefully chosen collection of one's best works. In areas
such as art, music, architecture, portfolios might contain
samples of artists' works, musicians' compositions,
architects' conceptions, or models' photographs (Olson,
1991, p. 73). Olson (1991) reported that a *portfolio* was
originally defined as a portable case for carrying loose
papers or prints, *port* meaning to carry and *folio*
pertaining to pages or sheets of paper. Today *folio* refers
to a large collection of materials, such as documents,
pictures, papers, work samples, audio or videotapes (p.
73). The literature has provided several definitions for
portfolios. In the next section, the principles that
outline the definition of portfolios used in this study
will be presented.

1- *Portfolios are collections of best works*. Paulson,
Paulson and Meyer (1991) described the portfolio as "a
purposeful, integrated collection of student work that

exhibits the student's effort, progress and achievement in one or more areas. The collection must include student participation in selecting contents, the criteria for selection, the criteria for judging merit and evidence of student reflection" (p. 60). Wolf and Dietz (1998) described the essential features of portfolios:

> A portfolio is a structured collection of teacher and learner work created across diverse contexts over time, framed by reflection and enriched through collaboration that has as its ultimate aim the advancement of teacher and learner learning. (p. 13)

Wolf (1996) described a portfolio as a "collection of information about a teacher's practice" (p. 86). He states that the collection should be more than a scrapbook of miscellaneous artifacts and lists of professional activities. Instead, the artifacts should be framed with clear identifications, contextual explanations, and reflective commentaries that examine the teaching documented in the portfolio (p.86).

Hurst, Wilson and Cramer (1998) described portfolios as "visual representations" of teachers, with the content necessarily varied, determined by the individual's teaching philosophy, values, and viewpoints" (p. 1). Winsor and

Ellefson (1995) defined a portfolio in teacher education as a "fusion of processes and product. It is the process of reflection, selection, rationalization, and evaluation together with the product of those processes." (p. 68-69). The products include a "thoughtfully organized collection of artifacts illustrating professional development, pedagogical expertise, subject matter and child development knowledge, and professional and personal attributes that contribute to teaching" (pp. 68-69).

Overall, a portfolio could simply be defined as a collection of information about a student teacher's abilities gained in different contexts over time. This information could include a wide variety of materials, such as unit and lesson plans, tests and assessments, learner work, photographs of classroom life, philosophical and goal statements, self-assessment and written commentaries, letters of recommendation, formal evaluations, certificates, transcripts, and the like (Wade & Yarbrough, 1996).

Portfolios also show up "best works" as evidence that learning has taken place. Arter and Spandel (1992) indicated that portfolios allow constructors the

opportunity to showcase their best efforts, progress and
achievement.

2- *Portfolios encourage collaboration*. Collaboration
is an important part of portfolio preparation process
because it contributes to learning through sharing of
ideas. Furthermore, this collaboration causes a discussion
among the portfolio creators (Graves, 1994; Routman, 1994).
Collaboration may occur in the form of peer or teacher
feedback. It is a means for students or teachers to
communicate what they know and what they have learned.

3- *Portfolios enhance reflection*. Wolf (1996) refers
to Shulman's observation that portfolios "retain almost
uniquely the potential for documenting the unfolding of
both teaching and learning over time and combining that
documentation with opportunities to teachers to engage in
the analysis of what they and their students have done"
(p.130). It is in this way that portfolios enhance
reflection. The careful self-evaluation and examining
teaching and learning strategies, the student teachers
gather valuable information that can be used to examine
their development.

In sum, portfolio preparation is not a motionless
process, but a process that changes from creator to creator

as well as from one portfolio preparation situation to another. Next section presents the studies dealt with portfolio development and use in teacher education programs in order to give a baseline for the present study.

Research on student teacher portfolios

Several studies have been conducted to investigate the use of portfolios in teacher education programs. For example, Borko, Michalec, Timmons and Siddle (1997) reported a study done at the University of Colorado, Denver. Student teachers were required to develop portfolios as part of a professional seminar project. Artifacts included teaching philosophy, description of teaching situation, planning entry, teaching entry, student learning entry, as well as reflections on teaching, student learning, and the experience of constructing the portfolio. The two data sources for this study were written reflections by twenty-one students and semi-structured interviews with eight students. The data were analyzed by conducting a content analysis to find out emerging themes from the reflective statements and interviews. The authors asked students to reflect on the experiences of developing the portfolio, and its effect on their professional development. They reported that 71% of the students

indicated that reflection was beneficial in the portfolio process. The student teachers stated that the portfolio allowed them to be reflective and to make connections between theory and practice, which helped them think about their strengths and weaknesses in becoming a teacher. The student teachers also felt that during the preparation of portfolios they were able to identify ways to improve their teaching. Positive factors were the support and guidance from the university program, sharing ideas with peers, and support from the cooperating teacher. Negative factors included the time constraints, the characteristics of the portfolio assignment, conflicts with student teaching obligations, and past experiences in the masters program.

Dana and Tippins (1998) proposed a model of portfolio for science teaching as a form for self-reflection and evidence of the student teachers' thoughts and understandings of what it means to learn and teach science. For their study, student teachers were asked to identify a problematic aspect of science-specific pedagogy, and then collect and select evidence demonstrating what they knew and were able to do about it. In addition, they had to organize the evidence for presentation in the portfolio and to engage in conversations with their peers about their thinking, growth and development. The science teaching

portfolios were required to have an opening statement

expressing the portfolios' purpose, a variety of evidence

with tags or captions, and a reflective synthesizing

statement (Dana & Tippins, 1998). As the researchers

suggested, "The science teaching portfolio framework should

be viewed as a flexible mechanism that can be adapted in a

host of ways to encourage documentation of knowledge,

skills and disposition and promote reflection on

professional growth" (p. 724).

Lyons (1998) examined the teacher's development as a

reflective practitioner in a longitudinal study of ten

graduates of the Southern Maine's Extended Teacher

Education Program (ETEP). She conducted open-ended

interviews with teaching interns during training and two

years later to determine how ideas concerning reflective

practice changed over time. Her research indicated that

there was a pattern of reflective processes developing and

transforming over time. She suggested that the critical

conversations concerning the significance of portfolio

entries provided a "scaffold that fosters teacher awareness

of their knowledge of practice" (p. 121). Two additional

observations from this study indicated that one's teaching

philosophy becomes embedded in practice through the process

of reflection and this process comes about through

collaborative inquiry concerning the personal values one holds for teaching and learning (p. 124).

Other researchers described the issue of documenting knowledge and skills through portfolio development as well. For example, a study by Wade and Yarbrough (1996) documented how prospective teachers make personal meanings through portfolio development. They (1996) conducted a study to examine 212 student teachers' efforts to think reflectively through the process of creating portfolios in a community service-learning project. The portfolio includes both instructor-determined assignments such as a research paper or lesson plan, as well as items chosen by the student teachers such as artwork, cartoons, or photos. Three data collection methods were used in this study: prospective teachers' essays; surveys; and standardized, open-ended interviews. The results of the study indicated that many of the participants noted the personal meaning, satisfaction, and sense of accomplishment that resulted from creating their portfolios. Furthermore, many of the prospective teachers demonstrated reflective thinking in the process of their portfolio construction. Evidence found by the researchers demonstrated that the prospective teachers were making sense of their community service-learning experience, developing new understandings of and

recognizing links between different aspects of their life experience, and formulating insights for future options.

Bartell, Kaye, and Morin (1998b) reported a study done by the Division of Curriculum and Instruction faculty at California State University, Los Angeles (CSULA). Student teachers were introduced to the format, purpose, and use of teacher-constructed portfolios. As they progressed through each course in the program, they were asked to produce evidence that they fulfilled the program goals. The researchers concluded that portfolios provided opportunities for students and faculty to make connections between theory and classroom application. In addition, the portfolios encouraged student teachers to reconstruct their theoretical knowledge in accordance with their personal experience in forming their personal and professional theory.

Carroll, Potthoff and Huber (1996) described the portfolio design process as implemented in The Wichita State University (WSU) undergraduate teacher education program from faculty members' point of view. 37 faculty members were contacted by e-mail, and asked to fill out the survey. After three years of portfolio use in teacher education, it was found that the faculty was still

"learning about portfolios, seeking clarity of definition, purpose, and benefits" (p.259). In addition, the authors stated that portfolio assessment allowed student teachers to develop their individual teaching philosophy and pedagogy, and connect these to program objectives.

Anderson and DeMeulle (1998) surveyed 127 teacher educators throughout the United States to examine portfolio practices in twenty-two teacher education programs. Their findings showed that respondents have used portfolios for a range of six months to seventeen years. They found that portfolios were used for specific purposes such as promoting learning and development (96%), encouraging reflection (92%), providing evidence for assessment and accountability (88%), and documenting growth of student teachers (88%). Ninety-two percent stated that portfolios had a positive impact on student teachers because portfolios were learner-centered, defined by professional standards, and reflective.

Stone (1998) compared two different groups of student teachers participating in a study (a) to examine the impact of portfolio development on student learning and (b) to determine an effective method for student portfolio construction at California State University, Fresno. Each

of the two groups received different levels of guidance and

support in the process of preparing their portfolios.

Group 1, which consisted of 25 student teachers, received

information on portfolio development at the beginning of

their first student teaching experience in September, and

additional support throughout the year from their

supervisors. Their portfolios were evaluated by these

supervisors after both the first and second semesters of

student teaching. Group 2, which consisted of 60 student

teachers, began portfolio development in their final

student teaching semester in February. In May, at the end

of the spring semester, the two groups completed a

questionnaire to evaluate their experience with portfolios.

In addition, semi-structured interviews were conducted.

The majority (75%) of Group 1 believed that portfolios

documented learning and accomplishments whereas only 48% of

the second group agreed that portfolios were useful in

documenting learning and accomplishments (p. 109). Stone

found that some student teachers were confused while

developing their portfolios because of lack of

understanding and the amount of time required. She also

stated that there was a need for a more carefully planned

introduction to portfolios beginning early in the teacher

education program. She concluded that portfolios were not

only a documentation of what is learned in student teaching, but also an important instrument for the development of reflection, self-evaluation and professional development. (p. 113)

Scanlan and Heiden (1995) conducted a one-semester study on the use of portfolios to enhance students' learning at the University of Wisconsin –La Crosse. Forty-nine student teachers were enrolled in a block of three elementary education courses. They were required to create a portfolio in which they demonstrated and reflected upon their competency as educators. An external assessor from the education field evaluated each portfolio since the researchers believed that an outside reviewer would inform and enhance the portfolio review and development process in this program. This external assessor evaluated 15 randomly selected portfolios. Each researcher met with half the students and the external evaluator met with the 15 randomly selected students. One finding was that the student teachers discovered more about their abilities to reflect once they started preparing their portfolios. Another finding was that because a large portion of their grades depended on the portfolio, they concentrated more and put a lot of effort into it. The results overall indicated a number of changes in using portfolios such as

the development of a new evaluation and grading rubric,
revision of the portfolio assignment in the course syllabi,
and sharing the evaluation criteria with the students.

Studies reviewed above mainly focused on reflective
thinking and portfolios in science and math teacher
education programs. However, only two studies were
conducted on second language teacher education (ESL)
(Jadallah, 1996; Antonek, McCormick & Donato (1997).

Jadallah (1996) examined how different types of
learning experiences encouraged reflective thinking in six
ESL student teachers. The course consisted of a two-hour
weekly seminar, and practice teaching requirement at a
local junior high school. During the practice teaching,
the student teachers prepared four official lesson plans,
wrote a reflective analysis paper on "the teaching and
learning interactions" that happened during each lesson,
and developed a portfolio "that documented and explained
the value of their participation in specific field
experience activities" (p. 74). Jadallah argued that
during the practice teaching, the student teachers were
given "teaching experiences and subsequent reflective
analysis" which provided opportunities for them "to
construct meaning about teaching and learning on the basis

of their own particular experiences within the context of a specific classroom" (p. 74).

Antonek, McCormick and Donato (1997) also analyzed the portfolios of two ESL student teachers completing a teaching seminar. The main purpose of this study was to understand how each student teacher perceived changes over time in his/her concept of self as a teacher through their portfolios. The researchers cited three ways that support portfolios promote growth and reflective thinking: (1) portfolios serve as a way for teachers "to select and document activities and behaviors in their classroom," (2) they are a "tool for developing decision-making skills," and (3) when used as part of a teacher education program, portfolios may be used as an alternate form of assessment" (p. 15). Moreover, they confirmed that all three uses of portfolios reflected the autobiographical nature of portfolios: "portfolios assist teachers in changing their own practice and constructing their own professional identities" (p. 15).

While the portfolio may have a single author, the contents of the portfolio are derived from the student teacher's interaction with other preservice teachers, university personnel, site administrators and cooperating

instructors, among others. The portfolio allows the

student teacher to join multiple experiences and influences

in a cohesive and coherent document. (p.16)

The researchers concluded that portfolios "are highly

appropriate" tools to "mediate teacher development that is

comprehensive, individualistic and reflective" (p.24).

They also added that each portfolio was a unique

autobiography of its author because they told a rich and

vivid story of its author; therefore portfolios were

appropriate to understand teacher development.

As indicated in the studies mentioned above, there is

a growing acceptance in using portfolios to document the

student teachers' professional development and as a means

for reflection on profession and practice including (a)

demonstration of teacher competencies, (b) evolution as a

reflective practitioner, and (c) awareness and evolution of

self as a teacher. Anderson and DeMeulle (1998) also

pointed out that using portfolios has many advantages such

as it allowed the student teacher to feel a sense of

accomplishment in the finished product and that it would

help them to obtain a teaching position when they applied

for a job. Barton and Collins (1993) summarized the

benefits of using portfolios in teacher education as
follows:

- Empowerment: the shift of ownership of learning from
  faculty to learner

- Collaboration: the ability to allow learners to engage
  in ongoing discussions about content with both peers
  and teachers

- Integration: the ability to make connections between
  theory and practice

- Explicitness: the learner's focus on the specificity of
  purpose for the portfolio

- Authenticity: direct link between artifacts included
  and classroom practice

- Critical thinking: provided by the opportunity to
  reflect on change and growth over a period of time.

Several other advantages mentioned by student teachers
were (a) receiving support and guidance from those involved
in the portfolio process; (b) being able to share ideas
about portfolios with peers; (c) receiving support from
their cooperating teachers (Borko, Michalec, Timmons &
Siddle, 1997). Improving communication with faculty
(Althanases, 1994; Georgi & Crowe, 1998) and developing

organizational skills (Dutt-Doner & Gilman, 1998) through the portfolio process also were cited as a benefit by student teachers. As the results of these studies suggested, with careful attention to the introduction of the portfolio and guided support throughout the portfolio creation period, many student teachers would invest themselves in the process, enhancing not only their abilities to think reflectively but also their enthusiasm for learning about themselves, others, and the process of teaching. However there are some limitations in the development of traditional paper-based portfolios.

As opposed to its advantages, several studies also showed some disadvantages of using portfolios in teacher education. Portfolios also require a large amount of time to develop. Lack of time to prepare the portfolio was the major challenge student teachers mentioned as reported in the literature (Dutt-Doner & Gilman, 1998; McKinney, 1998; Stone, 1998). Zidon (1996) reported that student teachers stated that time was a limiting factor when constructing their portfolios. Many of them did not start working on their portfolios on time because of their time commitments to their responsibilities as a student teacher during their practice teaching.

In addition, difficulty in storing all the artifacts is another major challenge the student teachers reported. Student teachers collect a variety of artifacts such as evaluations from supervisors and cooperating teachers, reports of observations of teaching, lesson plans, learner work samples, photographs and videotapes of teaching experiences and so forth in their portfolios. However, most portfolios that are being used in colleges of education are mainly printed, compiled in a 3-rings binder. Therefore, as Georgi and Crowe (1998) said such problems as storage, maintenance, and transportation can be solved through the use of technology, i.e. electronic portfolios.

Electronic Portfolios

An electronic portfolio may be defined as "a purposeful collection of work, captured by electronic means, that serves as an exhibit of individual efforts, progress, and achievements in one or more areas" (Wiedmer, 1998, p. 586). Electronic portfolios differ from traditional portfolios in that information is collected, saved, and stored in an electronic format (Barrett, 1998). It is organized by using a combination of media tools such as audio/video recordings, multimedia programs, database, spreadsheet and word processing software as well as CD-ROMs

and the World Wide Web with hypermedia links connecting that evidence to the objectives of the course and program (Georgi & Crowe, 1998; Lankes, 1995; McKinney, 1998; Niguidula, 1993). In other words, "(the) electronically enhanced portfolio augmented the traditional print portfolio with electronic materials that can strengthen particular portfolio components" (Lieberman & Rueter, 1997, p. 46). Electronic portfolios have the potential to preserve many of the teaching and learning artifacts collected by the teacher candidate during the course of teacher training (Doty & Hillman, 1998; Jackson, 1998; Milone, 1995; Richards, 1998). According to Barrett (2000), the use of technology to create electronic portfolios had a triple purpose – to integrate technology into teacher education curriculum; to provide opportunities for the student teachers to develop their computer proficiency; and to solve the storage problem of many artifacts student teachers prepared during their teacher education.

The electronic portfolio still serves the same purpose of the traditional pen/paper portfolio in teacher education "as a way to provide a creative method for allowing students to express who they are and what they can do, as a tool which encourages reflective practice (Polonoli, 2000,

p. 13). Even though both traditional portfolios and electronic portfolios can be developed for different purposes, they still enhance student learning and growth, and have the same advantages. In the next section, the use and development of electronic portfolios in teacher education will be discussed in detail since electronic portfolios are one of the components of the present study.

Research on electronic portfolios in teacher education

Numerous advantages associated with the use of electronic portfolios have been suggested by the literature. Barrett (1998) noted that electronic portfolios are a unique way to document student progress, encourage improvement and motivate involvement in learning. Bull, Montgomery, Overton and Kimball (1999) argued that electronic portfolios promote learner self-evaluation as they maximize the use of diverse learning strategies. McKinney (1998) agreed with this assertion and added that electronic portfolios provide opportunities to seek out and form connections in dynamic, non-conventional, and learner-controlled ways.

Richards (1998) introduced a Hyperstudio project designed to integrate technology into an undergraduate teacher education curriculum through the use of electronic

portfolios. The purpose of the project was to have "students construct meaning around an education-related, literacy-based dilemma, and use technology as a tool for recording and sharing their responses" (p. 1). One hundred education students were divided into twenty groups of five students. Students worked in cooperative groups with one individual being as the technology coordinator. Other roles for group members were discussion leader, strategy leader, and recorder. The groups were engaged in problem solving concerning issues in the literature and developed electronic portfolios during the course of three weeks. Each portfolio contained a group profile, topic notes in pop-up text fields, reading response activities, and a peer review card. Students felt they had learned how to develop an electronic portfolio to display their work, how to share with others, how to synthesize information to be placed into the portfolio, and how to share resources cooperatively. The study concluded that the technology experience was beneficial for students.

Morris and Buckland (2000) also reported the use of Hyperstudio to develop multimedia portfolios in an elementary teacher preparation program. In this study, student teachers were asked to document their work with children. According to the researchers, the student

teachers were encouraged to select particular products that would show their learning, and in a caption, to provide the context of their document and justify their selection with a reflective statement. The evidence that was used in the student teachers' portfolios included papers, homework, video, pictures, projects, diagrams, notes, animation, student teachers' voices, and music. The findings of this study supported the notion that in constructing their portfolios, student teachers learned from the development process and the product as well, while they demonstrated their ability to use technology. One of the assertions made from this study was that, "Electronic portfolio documentation using hypermedia software offers better management, storage, and distribution with the added value of providing a tool that promotes higher order thinking and creativity" (p. 4).

McKinney (1998) conducted a study of five student teachers who constructed electronic portfolios using the multimedia program Hyperstudio. Electronic portfolios were evaluated by using the following categories: organization, evidence of integration, evidence of reflection, evidence of growth in content knowledge from individual courses, evidence of focus on the individual child, and changes between the first and second portfolio. She found that the

process of creating electronic portfolios was very positive, resulting in much reflection. Student teachers indicated a positive attitude toward the potential of using multimedia portfolios in their teaching. She also suggested that further research should be conducted related to "how portfolios are used, and how to structure their development and how to support their use" (p. 101).

Similar conclusions have been drawn by Glasson and McKenzie (1999) who examined the development of multimedia portfolios for enhancing learning and assessment in a science methods class. Their study focused on the portfolio development of a group of four student teachers who planned science activities with middle school students. The students worked in groups to negotiate relevant aspects of development, such as where to locate homes and industry. The student teachers collected information and documented their learning and students' learning using a multimedia authoring tool. They included in their portfolios videotaped interactions with students, scanned samples of student work, digitized photographs, curriculum plans, and written assessments of their learning. As Glasson and McKenzie (1999) concluded, "Developing a hypermedia presentation enabled prospective teachers to construct and develop their ideas about teaching and learning. The

portfolios documented the progress of prospective teachers as they developed curriculum and taught children at a local stream and in the classroom" (p. 337).

Piper (1999) conducted a qualitative multiple case study to examine the perceptions of teacher candidates involved in the creation of portfolios electronically. Twelve teacher candidates were interviewed and their portfolio products were examined to determine the effectiveness of the electronic process from the student's perspective. Qualitative data was obtained through open-ended interviews with the teacher candidates, the course professor, and the computer lab technician, as well as through analysis of the electronic portfolio product. Whether the electronic portfolio could be considered an effective tool for documenting teacher candidate performance and the achievement of course objectives was the primary question investigated in this study. The electronic portfolio products were analyzed for evidence of self-reflection and self-assessment. She found that the primary effect of incorporating technology into the portfolio process was that students gained knowledge of computers and technical skill with software and hardware, particularly in graphics and multimedia. Most of the students were pleased with their final electronic portfolio

product and were proud of their accomplishments. Students were able to personalize their portfolios, demonstrate creativity, and show their competencies electronically.

A study by Milman (1999), for example, suggested that engaging student teachers in electronic portfolio development results in engaging them in reflective activities while connecting coursework and field experience. In this study, Milman (1999) documented the use of the World Wide Web to create electronic portfolios in a pilot student teacher education course as a tool for reflection. The objectives of the course were to create electronic portfolios, and to reflect upon their coursework and teaching experiences. The purpose of this study was to investigate how student teachers created their portfolios, what they learned as a result of creating their portfolios and what they saw as the advantages and disadvantages associated with using the World Wide Web. The class was taught in a multimedia laboratory and the software program utilized to create portfolios was Claris Home Page. Interviews with the participants, analysis of their journals, and observations in their classes revealed that the process was constructivist, demanding, and multifaceted. The student teachers reported that the process of creating electronic portfolios was very

positive, resulting in reflection about themselves as teachers. Through the analysis of the participants' journals, interviews, and observations, the following assertion was made: "Creating electronic teaching portfolios is a constructivist process that promotes an examination of student teachers' beliefs, philosophies, objectives, and purposes for teaching" (Milman, 1999, p. 3).

Teaching technology skills within a relevant context, solving storage problems, and offering the student teachers a potential tool for job employment are the major advantages of the electronic portfolio. Lieberman and Rueter (1997) suggest that there are many advantages of using e-portfolios such as:

> More types of information about the individual and
> his/her teaching can be included and displayed;
> Materials presented can be animations, simulations,
> and video clips; Electronic publications on the
> Internet . . . can be easily accessed; Portfolio
> materials are not lost during transport between
> reviewers (p. 47-48).

As Barrett (2000) suggested the advantages of electronic portfolios over paper-based portfolios were as follows:

- Makes learner work in many media accessible, portable, examinable, and widely distributable

- Makes performances replayable and reviewable; it is important to see more than once

- Hypertext links allow clear connections between program/course goals and portfolio artifacts

- Learners can publish their electronic portfolios on CD-recordable discs, videotape or Internet

- Creating an electronic portfolio can develop skills in using multimedia technologies

- A teacher with electronic portfolio will be more likely to have learners with electronic portfolios

Teacher education programs began to accept the use of technology as an important tool in the development of portfolios. By using technology, student teachers can develop their computer skills while at the same time show their growth as teachers in more creative ways such as electronic portfolios (McKinney, 1998; Richards, 1998; Piper, 1999).

Chapter Summary

   The literature review in this chapter has examined how
teacher and language teacher education have been re-
conceptualized. The paradigm shift from behaviorism to
constructivism prompted the field of teacher education to
understand the importance of both teacher's knowledge and
teachers themselves as constructors of knowledge. Then,
research on reflection in teacher education programs has
emphasized the importance of reflective experiences as
providing student teachers with opportunities to construct
meaning during the process of learning to teach. Moreover,
research has shown that developing a portfolio can enable
student teachers to reflect on their teaching practice, to
document their teaching experience, and to formulate plans
for improvement of their weaknesses (Anderson & DeMeulle,
1998; Borco, Michalec, Timmons & Siddle, 1997; Georgi &
Crowe, 1998). Finally, teacher education programs also
have begun to explore the use of technology as an important
tool in the development of portfolios. By using
technology, student teachers can develop their computer
skills while at the same time show their growth as teachers
in more creative ways (Barrett, 1998, 2000; McKinney,
1998). Therefore more research needs to be conducted
regarding the use of both pen/paper and electronic

portfolios, especially in the area of language teacher

education. Therefore, this study will examine the role of

portfolio preparation on the professional development of

EFL student teachers.

CHAPTER 3. METHODOLOGY

Introduction

This chapter describes the methodology that is used to carry out the present study. The remainder of the chapter will include a description of case study as a research methodology, research questions, selection of participants and procedures of data collection and data analysis.

Research Paradigm

The researcher in this study takes constructivist inquiry as the research paradigm because according to this paradigm, reality is based on multiple perspectives, there can be no single reality, and the constructivist paradigm sees the purpose of research as "the understanding and reconstruction of the constructions that people (including the researcher) initially hold, aiming toward consensus but still open to new interpretations as information and sophistication improve" (Guba & Lincoln, 1994, p. 113). Researchers view the world and act in ways consistent with the paradigm they follow. This paradigm is consistent with the researcher's beliefs about the nature of reality and the relationship of the researcher with the participants. Hence, the present study is conducted within the paradigm

known as constructivist inquiry discussed in the literature review chapter.

Case Study as a Research Methodology

Several researchers have supported the qualitative case study as an effective research strategy to investigate a specific educational phenomenon such as a program, event, person, process or social group (Merriam, 1988; Patton, 1990). Merriam (1988) described the case-study design as a blueprint for assembling, organizing and integrating information (data), resulting in a specific end product (research findings). Yin (1995) also argued that case study is "the preferred strategy when 'how' and 'why' questions are being posed, when the investigator has little control over events, and when the focus is on a contemporary phenomenon within some-real life contexts." Lincoln and Guba (1985) also suggest that the intent of the case study is to provide flexibility and opportunity for participants to express what they are experiencing. Therefore, stemming from Merriam, Yin and Lincoln and Guba's explanations, the case study methodology was chosen for this study because of the following reasons:

▪ It provides detailed description of an educational phenomenon (i.e., the use of portfolios).

- It allows the researcher to gather in-depth data about the given educational phenomenon (i.e., the use of portfolios).

- It permits the study of process in terms of portfolio construction within a specific context (i.e., 4th year EFL student teacher in a particular department).

- Case studies are reflective. It allows the participants themselves to develop individual perspectives regarding the process.

Since the present study's main focus was to look at the process of portfolio preparation, case study was chosen as an appropriate method to discover that process.

Research Questions

The study aims to answer the following main and sub-questions:

1- In what ways does preparing portfolios influence EFL student teachers' professional development?

(1a) Is there a difference in student teachers' professional development at the beginning and at the end of the portfolio preparation in terms of reflective thinking?

(1b) Is there a difference in student teachers'
professional development as compared by pen/paper portfolio
and electronic portfolio preparation in terms of reflective
thinking?

(1c) What are the perspectives of the student teachers
regarding the impact of portfolio preparation on their
professional development?

(1d) What are the perspectives of the student teachers
regarding the impact of portfolio preparation as compared
by pen/paper portfolio and electronic portfolio preparation
on their professional development?

2- In what ways does use of technology in preparing
portfolios affect EFL student teachers' professional
development?

(2a) Are there any differences between student
teachers' technology competency levels before and after the
electronic portfolio preparation?

(2b) Are there any differences between student
teachers' attitudes on using technology in the classroom
before and after the electronic portfolio preparation?

Research Context

The present study is conducted in the Department of Foreign Language Education at Boğaziçi University. This department offers a four-year undergraduate program in English Language Teacher Education. The basic components of this program consist of English language development, linguistics, and field-specific courses such as foreign language teaching methodology. Through elective courses, students are provided with opportunities to pursue individual interests in various cultural and professional subjects. Thus, the overall objective of the program is to help students to achieve mastery of the English Language and to provide them with knowledge and sufficient practical skills for teaching English as a Foreign Language.

During the first two semesters of their teacher education program, students take basic language development courses such as oral and written communication. While taking these courses, they are also required to take field-related courses such as introduction to language and linguistics, introduction to education, introduction to psychology, applied linguistics, language awareness, American and English literature as well as school

experience in which they go and observe teaching in various schools.

From the 3rd semester on, students start taking field-specific courses such as second language acquisition, applied linguistics, teaching language skills, sociolinguistics and education, teaching young learners, language testing, classroom management, and material evaluation and preparation. Student teachers also take a computer skills course from the Department of Computer Education and Educational Technology (CET 360 Instructional Technologies and Material Development). This course includes the concepts and principles of educational technology as an integrated part of teaching and learning process, basic information technology skills, and selection, development, implementation and evaluation of media with regard to learning theories. The students are introduced to audio-visual applications, slides, graphs, films and printed materials; software including simulations, tutorials, drills, interactive learning environments, intelligent systems and multimedia.

In the methodology and skills courses, the students are required to engage in peer teaching, which is followed by peer and self-evaluations. The practicum courses

consist of observation and practice teaching. During the 1st semester of their senior year, student teachers are given opportunities to observe EFL classes in primary and secondary schools. In the 2nd semester of their senior year, student teachers are engaged in student teaching. The student teachers are also required to develop teaching portfolios as one of the requirements of practice teaching component of the program. For these portfolios, they are required to do some tasks that encourage them to reflect on their teaching such as writing journals, making lesson plans and presentations, writing self- and peer-evaluations, and engaging in written dialogues with the cooperating teachers and university supervisors in electronic environment.

The Participants

   The sample for this study included five senior level teacher candidates (one male and five females) completing their undergraduate degree in the Department of Foreign Language Education at Boğaziçi University. All these student teachers were graduates of Anadolu Teacher Lyceum age range between 20-22 years old. These teachers met the criteria required for a purposive sample, that is, they are "the sources that will most help to answer the basic

research questions and fit the basic purpose of the study"
(Erlandson, Harris, Skipper, & Allen, (1993). The
participants in this study were given pseudonyms while
reporting the results.

An informed consent was obtained from each
participant. A copy of the consent agreement is included
in Appendix A.

<div align="center">Data Collection Procedures</div>

Data for this case study came from: (a)
questionnaires, (b) interviews, and (c) artifacts from
pen/paper and electronic portfolios. Collection of data
was completed in two consecutive semesters, Fall 2002 and
Spring 2003. .

Questionnaires

Two questionnaires (one on technology competency and
one on computer attitudes) were administered to student
teachers before they started to prepare their portfolios,
and after they completed their portfolios. The purpose of
these pre- and post-questionnaires was to investigate
whether the electronic portfolio enhanced their technology
skills and whether there were any changes in student
teachers' attitudes towards computer use in the classroom.
The two questionnaires are described below:

The Technology Proficiency Self-Assessment Questionnaire:

The *Technology Proficiency Self-Assessment* (TPSA) was developed by Ropp (1999). It is a five-point Likert scale (see Appendix B) consisting of 20 items, 5 items in each of the following four domains of technology proficiency: 1) Electronic mail, 2) World Wide Web, 3) Integrated Applications, and 4) Integrating Technology into Teaching. The TPSA was also designed to provide individuals with examples of the variety of ways that a proficient teacher candidate might use computers and technology in the classroom. In this manner, the TPSA could be used by a teacher candidate as a tool that would provide examples of technology proficiency as well as indicate progress toward proficiency. The entire scale was found to have a reliability alpha of .94 from a set of responses from 506 inservice teachers (Ropp, 1999). Alphas were also determined for each of the four subscales: Electronic mail (.78), WWW (.81), Integrated Applications (.84), and Teaching with Technology (.88).

In this study the TPSA was administered before and after the electronic portfolio preparation to assess student teachers' skills in using technology for teaching and learning, and to examine the changes in these skills

after the students completed the electronic portfolio

project. To provide consistency in measurement and

compatibility for analysis, the student teachers were asked

to respond on a five-point Likert scale, with 1 indicating

"strongly disagree" and 5 indicating "strongly agree."

Student Teachers' Attitudes toward Computers Questionnaire:

The Teachers' Attitudes toward Computers (TAC)

questionnaire was administered before and after the

electronic portfolio preparation to investigate student

teachers' attitudes towards computer use in education (sees

Appendix C). TAC was developed by Christensen and Knezek

(1996) for a study of the effects of technology integration

education on the attitudes of teachers. The TAC was

originally constructed as a 10-part instrument that

included 284 items spanning 32 Likert and Semantic

Differential scale. Sets of items were selected from 14

well-validated computer attitude survey instruments during

the construction process. In this present study, the 5.11

version of TAC questionnaire was used.

The 5.11 version of TAC is a 95 item Likert-scale

instrument for measuring teachers' attitudes toward

computers ranked on a five-point scale from "strongly

agree" to "strongly disagree" in nine domains: Interest,
Comfort, Accommodation, Interaction (Electronic mail),
Concern, Utility, Perception, Absorption, and Significance.
They were operationally defined as follows:

- Interest – enjoyment and satisfaction in using
computers.

- Comfort – lack of anxiety; comfortable using
technology.

- Accommodation – acceptance of computers;
willingness to learn.

- Interaction - Electronic mail

- Concern – fear that computers will have a
negative impact on society.

- Utility – belief that computers are useful for
productivity and instruction.

- Perception – feelings about the computers
overall

- Absorption – belief that computers are a part of
many areas of work.

- Significance – belief that computers are
important for student use.

Internal consistency reliability estimates for the
nine subscales of the TAC, based on data from 550 teachers
in a large metropolitan, is provided in Table 1
(Christensen & Knezek, 1996). All 9 TAC scales appeared to
be "very good" according to the guidelines provided by
DeVellis (1991).

Table 1 *Reliability Estimates for Nine Scales of the TAC*
Ver. 5.11

Scale	Alpha	Number of Items	N cases
Part 1 - Interest	.91	10	520
Part 2 - Comfort	.94	9	533
Part 3 - Accommodation	.84	11	523
Part 4 - Interaction	.96	10	522
Part 5 - Concern	.89	10	530
Part 6 - Utility	.93	10	525
Part 7 - Perception	.97	7	520
Part 8 - Absorption	.89	10	532
Part 9 - Significance	.93	10	525

Interviews

Another primary source of data collection for this
study was interviews with the student teachers. Patton
(1991) identified three types of interviews as: the
informal conversational interview, the guided interview and
the open-ended standardized interview. The difference

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between the three types is the degree to which questions are prepared. The informal conversational interview has been defined as relying heavily on "the spontaneous generation of questions in the natural flow of an interaction" (p.280). It is conducted with a purpose, but the interviewer allows the conversation to determine the depth of the responses. The guided interview involves describing a set of issues to be explored with each person interviewed. It uses established questions, but again, naturalistic conversations affect the depth of the responses. The standardized open-ended interview is described as a set of carefully worded questions in which only prepared questions are asked with no conversational component.

For the purpose of this study, the guided interview approach was chosen since it allowed a systematic collection of data from each participant, while also providing insights into the participant's world. This approach also provided a comfortable context in face-to-face interviews.

The interview questions were developed by the researcher (See Appendix D for the interview questions) based on the literature she reviewed. The interview

questions were piloted first with the former 4th year
students to see if they provided adequate data for the
related research questions.

These former student teachers mainly argued that
portfolios as a whole were very useful for them to see
their overall development, and to collect their artifacts
they created during their entire practice teaching.
Typical responses included the following:

> I thought that it would be useful to gather all the
> materials and tasks that I all did both in practice
> teaching and methodology courses because next year I
> plan to use them as samples in real classrooms.

> Well, I think the portfolio process is good; you do a
> wonderful project that reflects you and your strengths
> and your abilities that you can take and even if you
> never show anybody, it is something that you have as
> an evidence.

In addition, they also said that they could use these
portfolios when applying for a job.

> Of course, it will help us to get the job, and think
> about it if it is on CD or on the Web. It will be
> wonderful to show the electronic portfolio as our

electronic resume. It will definitely make us seem

professional.

One of the ways they (teachers) are going to use it (a

portfolio) is in job interviews; but more importantly,

you (teachers) can use it as a way of measuring

progress.

Well, I wanted it (the portfolio) to be an honest

reflection of me, and I wanted to have, I really

wanted to have something that I could take to job

interviews.

They also supported the idea of having electronic

portfolios in this department. One student indicated the

advantages of electronic portfolios over pen/paper ones as

I think it is better to have electronic portfolios

because I can use videos, computers and have a chance

to show them when I apply for a job. Paper portfolios

take more time and place but you can send electronic

portfolio, show it and make evaluations easy.

These interview responses showed that portfolios

(pen/paper or electronic) would be favored by the student

teachers, and they were willing to prepare portfolios. It

also supported the use of the same interview questions to

collect data in the present study.

Pre- and Post-Interviews with the Participants: Each student teacher who volunteered to participate in the study was interviewed concerning preparation of both pen/paper and electronic portfolio before and after the completion of the portfolio by the researcher herself. The interviews were conducted in English and were recorded. Each participant's interview lasted almost thirty minutes. During the interviews, the researcher periodically summarized her understanding of what the participant had said and asked questions to clarify any misunderstanding on the researcher's part. This was the first level in a process known as *member checking* and is "the most crucial technique for establishing credibility and trustworthiness" of the study (Lincoln & Guba, 1985, p. 314).

Portfolios

Another primary source of data in this study was the artifacts the student teachers prepared for their portfolios. The student teachers in this department were required to collect artifacts such as lesson plans, self-evaluation and peer-evaluation sheets, or reflective narratives required by the instructors in pen/paper portfolios. These portfolios were 3-ring notebooks or folders, organized with dividers and sections for paper-

based documents demonstrating each task or activity for particular courses. Most often the artifacts comprised text and images on paper.

The documents under investigation in this study were portfolios each participant prepared during the methods course (Fall 2002-1st semester) and subsequent semester of practice teaching (Spring 2003-2nd semester). In addition, the student teachers also prepared their electronic portfolios in the second semester along with their 2nd pen/paper portfolios. Each student teacher decided which software he/she would use to develop and organize his/her electronic portfolio.

The portfolio artifacts included several classroom observation tasks, evaluation papers, student teacher narratives and student teachers' journals. Each of these artifacts is described in detail below.

a) Classroom observation tasks: The student teachers were required to attend the cooperating schools they were assigned during their senior year. While observing the lessons, they were required to perform certain tasks from a list of a variety of tasks included in Wajnryb (1992). These focused observation tasks required the student teachers to analyze a specific aspect of a lesson. Hence,

they provided opportunities for reflections on that specific aspect of the lesson they observed. Among 30 tasks, the participants were asked to do same three tasks for the purposes of the study so that the researcher could have the control over the tasks they did. They wrote about the learning environment (task 1), managing error (task 2) and giving instructions (tasks 3). Information about each task is attached to Appendix E. They wrote about same three tasks three times, - three for their 1st, three for their 2nd pen/paper portfolios, and three for their electronic portfolios (See Appendix F for a written sample of each tasks).

b) Evaluation papers: When the participants observed classes of various cooperating teachers in the 1st semester, they were required to write an evaluation of the cooperating teacher. For these reflections, they were asked to reflect on the most and least effective aspects of the lesson they observed. In the 2nd semester when they started practice teaching, they were required to write self and peer evaluations after each teaching practice. They were again asked to reflect on the most and least effective aspects of their own teaching and their peer's teaching. Such reflection-on-action was aimed at helping the student teachers for their personal growth as a teacher (See

Appendix G for a sample of cooperating teacher evaluation, Appendix H for a sample of self-evaluation, and Appendix I for a sample of peer-evaluation).

   c) Student Teacher Narratives: The student teacher narrative activity gave the student teachers a chance to express some of their thoughts and feelings about the teaching profession to gain a deeper understanding of themselves such as why and how they see themselves as future teachers. Teacher narratives have three main advantages in encouraging reflective thinking (Canning, 1991). First, they give insights into the complexities of a teacher's day and the motivations of a teacher's actions. Second, teachers gain insights because of their self-inquiry. Third, teacher narratives provide rich source of data for case studies related to teacher dilemmas and events. Therefore, they wrote one teacher narrative for their 1st pen/paper portfolios, one for 2nd pen/paper portfolios, and one for electronic portfolios (See Appendix J for a sample of a teacher narrative).

   d) Student Teachers' Journals: Journals served as another source of data. Richards and Ho (1998) reported that journal writing was successful because "the act of silent writing, even for five minutes, generates ideas,

observations, and emotions" (p.166). The student teachers

in this study were encouraged to write about issues related

to cooperating teachers', to their own or to their peer's

teaching practice. They were also informed that entries in

the journals must focus on what they thought about

portfolio preparation itself; and also were to serve as a

tool for reflection on course work and field experience.

Therefore, journals provided an opportunity for the student

teachers to practice reflective thinking.

The journals that student teachers were required to

write were electronic journals (e-journal)[1]. An electronic

journal is the word processor equivalent of pen/paper

journal, but it involves using a computer and a software

program. Each student teacher wrote his/her e-journal into

a database of a learning management system, called BULMS

(available at http://cet.boun.edu.tr). BULMS was developed

(by the Department of Computer Education and Educational

Technology) by using Internet technology to manage an

interaction between instructors and students (Akpınar,

2002). The students can plan, access and receive

information about the courses, e-communicate with their

peers and instructors, view course readings, participate in

forums to discuss course related issues and receive online

[1] All the student teachers wrote e-journals regardless of whether they were participating
to the research.

announcements about the course. The instructors can share
files, documents, assignments or any type of resources,
monitor and report students' progress, develop and
administer different types of assessments, and integrate
materials developed on different authoring platforms.
Therefore, BULMS was used to provide a portal for
electronic portfolios (See Appendix K for a sample of e-
journal).

Timeline

This study began in June 2002 with the Pilot Focus
Group Interviews with former 4th year students. The
interview question guide was followed, and responses were
noted. These interviews took place in one of the course
instructor's office. It lasted approximately one hour.

a) Recruitment

The recruitment started in October 2002. The
researcher personally visited one of the course
instructor's classes to lead a recruitment session
including a short explanation of the nature and the purpose
of the study, handing out a consent letter to the students,
and answering questions. This session ended with the
collection of consent letters signed by the volunteers to
the study. At the very moment of acceptance of

participation, the volunteers were assigned random ID numbers and were asked to use them with the data collection materials. These volunteers were promised extra credit toward their grade in the class for participation in this study.

b) Pre-interviews

The pre-interviews with the participants were conducted in the Fall semester of 2002-2003 at the beginning of their senior year at a location of their choice. The revised interview question guide was followed, and responses were audio taped. At the end of the interviews, pre-attitude and pre-competency questionnaire were administered. These two questionnaires were also administered to the whole class of fourth year students.

c) Introduction to portfolios

Following the initial interviews, the student teachers were asked to schedule a brief meeting with the researcher to discuss the portfolio and its requirements. Then student teachers started to develop their pen/paper portfolios in this semester.

d) School experience

During the Fall semester of 2002-2003 academic year, student teachers started to observe classes in cooperating

schools. They were required to do a minimum of a total of
30-35 hours of observation in English classes during this
semester. All student teachers were required to observe
English classes in elementary and secondary schools.
During this semester, the student teachers started to
prepare artifacts for their 1st pen/paper portfolios.

e) Group sessions

In February 2003, the second semester began; the
researcher and the participants had a group session in
order to discuss the process and the portfolio preparation.
Student teachers started to develop their 2nd pen/paper
portfolios. The computer lab hours were arranged for them
to work on their electronic portfolios also. The student
teachers in this group started to work in the computer lab
at the time they had chosen. The researcher also was
present at this lab to guide and assist them in their
electronic portfolio preparation.

f) Practice teaching

During the second semester of academic year of 2002-
2003, the student teachers were engaged in practice
teaching where they started to make a total of three
official presentations to the class, under the supervision

of the classroom teacher and the university professor, with
a trainee peer observing also.

g) Post-interviews

Post-interviews were conducted after all the
participants completed their portfolios at the location
they chose during the first week of June 2003. Completed
portfolios were to be submitted to the supervising teachers
on June 15. After they handed in their portfolios, they
were interviewed again to compare and contrast their
beliefs and ideas about portfolio preparation. Post-
attitude and post-competency questionnaires were given
after the interviews. These two questionnaires were also
distributed to the whole class of 4th year students.

Data Analysis Procedure

The following section will describe the data analysis
procedures for both research questions: 1- In what ways
does preparing portfolios influence EFL student teachers'
professional development? and 2- In what ways does use of
technology in preparing portfolios affect EFL student
teachers' professional development?

A combination of qualitative and quantitative
strategies was used for data analysis to ensure internal
validity. The raw data consisted of questionnaires,

transcriptions of audio taped interviews, pen/paper portfolios, computer printouts of electronic portfolios and electronic journals.

To answer the 1st main research question that focused on the impact of preparing portfolios on EFL student teachers' professional development, the sub-questions were analyzed by using the following schemes:

In order to answer the sub-question (1a and 1b), whether there is a difference in student teachers' professional development at the beginning and at the end of the portfolio preparation in terms of reflective thinking, portfolio artifacts were analyzed by using Hatton and Smith's (1995) framework of types of reflection to determine how the participants used different types of reflection to describe and justify their behaviors. Hatton and Smith (1995), as discussed in literature review, developed an instrument to measure different stages of reflectivity by engaging student teachers in performing a writing task (See Appendix L).

Descriptive writing was operationally defined as description without justification or explanation. Therefore, this type of reflective writing was characterized by the existence of declarative sentences,

lack of personal indicators such as "I believe", "I feel", or justifications such as "because". For example:

"… The students were very tired to answer …"

"… The lesson was really not good …"

When the description was combined with a justification, it was operationally defined as descriptive reflection. In this reflection type, one main language pattern was found: A declarative sentence would be followed by another in which the participant expressed her/his justification, i.e., an explanation of why. The word "because" might/might not be used between two independent sentences to form an independent clause with a subordinate clause such as:

"…I will use this activity again (because) students seemed to be interested…"

"…because of the noise, they did not understand …"

Dialogic reflection was operationally defined as a stepping-back in which the person who is reflecting uses explanations for why things happen the way they do and/or suggests alternatives. Examples for dialogic reflection were:

"…This was quite possibly due to …Alternatively …"

"…the problem here, I believe, was the fact that …"

"… while it may be true that …"

"…one the one hand, …, yet on the other …"

"…in thinking back, …, On reflection …"

"I guess that being in a school like X has made me aware of …" (Hatton & Smith, 1995, p. 42)

Finally, critical reflection was operationally defined as the recognition of the social, historical and political contexts that influence the actions and events. The units of critical reflection showed the same characteristics of dialogic reflection. However, the use of social, historical or political themes identified these units as critical:

"… shows our cultural characteristics …"

"… I think that is how we deal such problems as society …"

"… it may be different in 1960s …"

Hatton and Smith (1995) indicated "certain language patterns and syntax are likely to ensure that a particular unit of reflection is so coded" (p.42). Therefore, based on the type of reflection found in the portfolio artifacts, each idea unit was coded according to the following scheme:

dw = descriptive writing, dr = descriptive reflection, lr = dialogic reflection and cr= critical reflection. The frequencies of these codes were counted; then in order to find the statistical difference between the 1st and 2nd pen/paper portfolios in terms of reflective thinking, the Friedman 2-related samples test was conducted. Thus, the analysis of single reflective units provided the answer to how the participants used different types of reflection in their portfolio artifacts. In addition to quantitative data, descriptive data was also presented by giving quotations from the artifacts. While reporting these quotations, superscript and subscript codes were used to mark the start and the end of reflective units, e.g., ^{dw} $_{dw}$ = descriptive writing, ^{dr} $_{dr}$ = descriptive reflection, ^{lr} $_{lr}$ = dialogic reflection and ^{cr} $_{cr}$ = critical reflection to show what kind of reflectivity types was coded.

In order to answer the sub question (1c and 1d), that is the perspectives of the student teachers regarding the impact of portfolio preparation on their professional development, a content analysis by using Miles and Huberman's model (1994) was conducted to identify conceptual themes, i.e., what the participants mainly talked about in the interviews. First the interviews were transcribed, and then by reading each participant's

transcripts, the researcher identified the conceptual themes by finding out the recurring words and ideas. Then, she coded them into "conceptual categories" and used these categories to create a matrix of major themes of each participant. Then, the researcher compiled all of the themes first, and then sorted these themes under possible headings to answer the research question. Under each heading, supporting quotes from each participant were listed and discussed.

To answer the 2nd main research question, that is whether the use of technology in preparing portfolios affects student teachers' professional development, the sub-questions are first answered by using the following schemes for the analysis:

In order to answer sub-question (2a), namely whether there are any differences between student teachers' technology competency levels before and after the electronic portfolio development, both pre- and post-technology competency level questionnaires were tabulated and analyzed statistically.

In order to determine whether there was a change in student teachers' competency in technology use before and after the electronic portfolio development, the pre- and

post-test scores were compared with the Friedman 2-related samples test. In addition, in order to measure whether preparing electronic portfolio enhanced student teachers' competency level, the Mann-Whitney-U 2-independent samples test was conducted (on the gain scores) between two groups who prepared electronic portfolio and who did not. The group who did not prepare electronic portfolio was selected randomly among the senior student teachers. The gain scores of competency level questionnaire were determined by summing the self-reported value (ranging 1 to 5) for the 20 items. The maximum value for the questionnaire was 100 and the minimum value was 20. The gain score from the pre-test-and post-test for each student was calculated (post-test minus pre-test) and could result in a maximum value of 80.

In order to answer sub-question (2b), namely whether there are any differences between student teachers' attitudes about using technology before and after the electronic portfolio development, both pre- and post-technology attitude questionnaires were tabulated and analyzed statistically.

Some items on the attitudes questionnaire had negative wording and were reversed and coded before the data

analysis. If the respondent selected 1 or SD (Strongly Disagree), it was changed to 5 or SA (Strongly Agree). If the respondent circled 4 or A (Agree), it was changed to 2 or D (Disagree). To generate an average for each subscale, the items were summed and divided by the number of items.

In order to determine whether there was a change in student teachers' attitudes towards technology before and after the electronic portfolio development, the pre- and post-test scores were compared with the Friedman 2-related samples test. In addition, in order to measure whether preparing electronic portfolio positively change student teachers' attitude, the Mann-Whitney-U 2-independent samples test was conducted (on the gain scores) between two groups who prepared electronic portfolio and who did not. The group who did not prepared electronic portfolio was selected randomly among the senior student teachers. The gain scores of attitude questionnaire were determined by summing the self-reported value (ranging 1 to 5) for the 95 items. Thus, the maximum value for the questionnaire was 475 and the minimum value was 95. The gain score from the pre-test and post-test for each student was calculated (post-test minus pre-test) and could result in a maximum value of 380.

Triangulation: Using multiple data for evidence is a major strength of the case study approach (Yin, 1989). Triangulation occurs when different points of view and different types of data are collected to gain information. Therefore, multiple sources of data were used in this study including questionnaires, interviews, and artifacts from pen/paper and electronic portfolios. They provided triangulation, which means establishing the trustworthiness of results (Lincoln & Guba, 1985; Erlandson, et al., 1993).

CHAPTER 4. FINDINGS AND DISCUSSION

Presentation

The main purpose of this study was to describe how the portfolio process facilitated professional development of EFL student teachers. The two primary research questions were: (1) What is the impact of preparing portfolios on EFL student teachers' professional development? (2) In what ways does use of technology in preparing portfolios affect EFL student teachers' professional development? These questions were addressed by investigating the process of portfolio preparation as it was implemented in the senior year course work of the Department of Foreign Language Education.

The research questions used to guide this study were:

1- In what ways does preparing portfolios influence EFL student teachers' professional development?

(1a) Is there a difference in student teachers' professional development at the beginning and at the end of the portfolio preparation in terms of reflective thinking?

(1b) Is there a difference in student teachers' professional development as compared by pen/paper portfolio and electronic portfolio preparation in terms of reflective thinking?

(1c) What are the perspectives of the student teachers regarding the impact of portfolio preparation on their professional development?

(1d) What are the perspectives of the student teachers regarding the impact of portfolio preparation as compared by pen/paper portfolio and electronic portfolio preparation on their professional development?

2- In what ways does use of technology in preparing portfolios affect EFL student teachers' professional development?

(2a) Are there any differences between student teachers' technology competency levels before and after the electronic portfolio preparation?

(2b) Are there any differences between student teachers' attitudes on using technology in the classroom before and after the electronic portfolio preparation?

Results from each data sources were reported and interpreted with quotations and interpretive commentary. In presenting the results, only the most representative selections were chosen. This is not to say that what all of the student teachers had to say was of lesser importance. When similar ideas of the participants were

given, the only most representative quotes were selected in the report of this study.

Although the researcher tried to organize the data to support the responses to the research questions in such a way to avoid repetition, there were several areas in which it was impossible not to mention one theme within another due to unavoidably overlapping categories to support each other. The reader will find some themes fully discussed in one section while only mentioned in another.

The Impact of Portfolio Preparation on the Development of Reflective Thinking

Portfolio development has been shown to function as an instructional strategy to encourage reflective thinking (Anderson & DeMeulle, 1998; Antonek, McCormick & Donato, 1997; Bartell, Kaye & Morin, 1998; Guiliano, 1997; Jadallah, 1996; Lyons, 1998; Stone, 1998; Wade & Yarbrough, 1996). The reflective papers (e.g., the student teacher narrative, reflection papers on the classroom observation tasks, and the electronic journal) in the student teachers' portfolios showed evidence of student teachers' development in reflective thinking. In preparing those papers, they were engaged in close examination of what was being done in

the classroom and put those thoughts on paper. This
reflective process encouraged them to look for strengths
and weaknesses, and thus try to improve those areas.

The main factor that became apparent in data analysis
of the reflective papers was the reflectivity levels in the
student teachers' reflections. As seen in Table 2, a
Friedman 2-related samples test was conducted in order to
find out whether there was a significant difference between
the three portfolios in terms of reflective thinking.

Table 2 *Mean ranks between the three portfolios*

	1st portfolio		2nd portfolio		electronic portfolio	
	mean rank	p		mean rank	p		mean rank	p
1st dw	4.00	.05*	2nd dw	1.90	.031*	Elec. dw	1.40	.675
1st dr	2.80		2nd dr	1.60		Elec. dr	2.20	
1st lr	2.00		2nd lr	2.70		Elec. lr	2.40	
1st cr	1.20		2nd cr	3.80		Elec. cr	2.10	

* $p<.05$

They developed their 1st portfolios in the first
semester. Therefore, as seen in Table 2, much of their
reflective writing in their 1st pen/paper portfolios was at
a low level, primarily descriptive in nature. It showed
that student teachers needed assistance in better

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understanding what reflection was and how the process of reflection worked. However, the reflectivity quality in their 2nd pen/paper portfolios was more critical in nature. It showed that the student teachers were more aware of reflectivity and how the process of reflective thinking worked. In addition, the student teachers were well aware of what they were expected to do in their second portfolios. Therefore, they concentrated on what and how to write in their second portfolios. On the other hand, reflectivity in the electronic portfolios was not critical as expected. There were two explanations for that. The first one was that the student teachers knew that their second portfolios were graded for the course requirement, not their electronic portfolios. Therefore, they did not pay much attention to their electronic portfolio artifacts in terms of reflectivity and content. Second explanation might be that student teachers were very much concerned about the technicality of the electronic portfolios so that they gave importance to the outlook of their electronic portfolios rather than their content.

Table 3 *Mean ranks between the three portfolios in terms of reflective criteria*

descriptive writing			descriptive reflection			dialogic reflection			critical reflection		
	mean rank	p		mean rank	p		mean rank	p		mean rank	p
1st	2.90	.008*	1st	2.20	.44	1st	1.30	.12	1st	1.00	.015*
2nd	2.10		2nd	1.80		2nd	2.50		2nd	2.80	
Elect.	1.00		Elect.	2.00		Elect.	2.20		Elect.	2.20	

* $p<.05$

Furthermore, as shown in Table 3, in terms of each reflectivity criterion, only descriptive writing and critical reflection showed significant difference. Student teachers used more descriptive writing in their 1st portfolios whereas more critical writing in their second portfolios.

Furthermore, in the following discussion, in order to triangulate the statistical findings, each participant was presented according to the frequency and examples of reflective units in different reflective narratives they wrote (e.g., the student teacher narrative, reflection papers on the classroom observation tasks, and the electronic journal). In addition, the quotations from their interviews were also given to support the discussion. While reporting these quotations, superscript and subscript codes were used to mark the start and the end of reflective units, e.g., $^{dw}_{dw}$ = descriptive writing, $^{dr}_{dr}$ = descriptive reflection, $^{lr}_{lr}$ = dialogic reflection and $^{cr}_{cr}$ = critical reflection.

ESRA

Analysis of Esra's data sources in her 1st pen/paper portfolio (total 42 pages), including, the student teacher narrative, and reflection papers on the classroom

observation tasks, revealed: a) total of 63 descriptive writing, b) total of 41 descriptive reflection, c) total of 33 dialogic reflection, and d) total of 25 critical reflections.

The patterns of descriptive writing and descriptive reflection were mainly found in Esra's reflective task paper. When writing her paper on "giving instructions", Esra used her experience as a learner as the source for her descriptive reflection. However, as she made the transition from a language student to language teacher, her reflection was no longer based on her experiences as a language learner, but also on her new teaching experience in the cooperating school. While she used the same pattern of descriptive writing, now this unit served new purposes in her reflective paper. Here, Esra employed descriptive writing when describing her cooperating teacher's methodology of teaching. This description then led her to descriptive reflection, through which she expressed her difference in beliefs with the views on learning and teaching of her cooperating teacher. Specifically, descriptive reflection enabled Esra to consider why her cooperating teacher designed her lesson and taught the way she did and how she, Esra, personally, would redesign the lesson:

[dw] we have a unit on vocabulary about weather. Yesterday, I had to give the class a list of 10 words, through which we tried to make it fun by having the students' role play the meanings. But my cooperating teacher chose to use this list as a spelling exercise. [dw] [dr] I know that this does not work. But I can not change the lesson because it means to start from the very beginning and start over again. The way that I have to teach has to be same as what the cooperating teacher does, because she grades the students. [dr]

When Esra considered how her beliefs about language learning and teaching have been shaped by her personal experiences as a language learner, her experiences as a language learner then eventually led her into the third pattern, i.e., dialogic reflection in her teacher narrative paper. She began to explore the connection between her beliefs on language learning and teaching and her personal experiences as a language learner:

[lr] Based on my own experience, I feel that language learning is successful when language is used for communication. I believe that exposure to language is very important to language learning. While the language can be made more easily comprehensible, it is

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important to expose the learners to the 'whole'
language as much as possible, and therefore the
teaching method should include much L2 use. $_{lr}$

The fourth pattern of unit found was critical
reflection. In the following quotation from her teacher
narrative, we see how Esra moved from describing a teaching
approach, used by the cooperating teacher, to linking this
approach to its social consequences in her actual classroom
in the future:

> ^{dw} She opens class every day with having a short
> discussion section. And I actually thought that it
> works since she makes them participate to the
> discussion. $_{dw}$ ^{cr} It's personalized. And I think that
> one of my goals in my future class would be to create
> a small community where students participate often
> like that. $_{cr}$

Thus, descriptive writing served as a point of
departure for critical reflection. As Esra said that by
sharing personal information, she not only captured
students' attention and participation, but also created a
social environment or "small community" in her classroom.

Single units of descriptive writing, descriptive
reflection, dialogic reflection, and critical reflection

surfaced in her <u>2nd pen/paper portfolio</u> (total 138 pages): a) total 55 descriptive writing, b) total 34 descriptive reflection, c) total 68 dialogic reflection, and d) total 66 critical reflection. Her reflections in these artifacts took place within the high school context, i.e., during her practice teaching. This clearly demonstrates the role of the context in shaping the nature of Esra's reflection.

The first pattern of single unit "descriptive writing" was observed in Esra's 2nd portfolio 55 times in total as illustrated in the following quote from her self evaluation paper:

> ^{dw} The class level seems to be very low. The teacher does not use any English as far as I have seen. The exercises that this teacher uses are not really communicative in purpose. $_{dw}$

Esra used descriptive reflection in her artifacts for a total 34 times, which was the least one used. The quotation below was taken from her electronic journal. Here she used descriptive reflection to justify her choice of an activity:

> ^{dr} My objective in using this example was to have students create associations with the verb and adjectives that describe a celebrity. Students at

this time did not know conjugating verbs, so I wanted to work with a 'chunk' which could be used as an example for other similar situations. [dr]

Esra employed the third pattern of single reflective unit i.e., dialogic reflection for 68 times as seen in the following quote from Esra's electronic journal:

[lr] I felt completely discouraged after the test results. these results were not a reflection of the success, but rather a reflection on the students' motivation to work. [lr]

The last pattern of single unit i.e., critical reflection was found 66 times in her portfolio artifacts. The quotation below was taken from her electronic journal:

[cr] The test results are not good. But when I think about this, it seems apparent that students don't see the relationship between the topic and their interest. So, we need to make the materials appealing and appropriate to the students' lives to motivate them to participate? [cr]

Through this pattern of reflection, Esra realized that the scores were influenced by the students' motivation and that this motivation, in turn, was a reflection of a social

factor, i.e., the relationship between the materials used in the classroom and the students' personal interest.

AYŞE

Analysis of Ayşe's artifacts in her 1st pen/paper portfolio (total 54 pages), including the student teacher narrative, and reflection papers on the classroom observation tasks, revealed: a) total of 71 descriptive writing, b) total of 51 descriptive reflection, c) total of 40 dialogic reflection, and d) total of 29 critical reflection.

The nature of the reflective experience, including both the context and the content appeared to affect the type of reflection found in Ayşe's writing. For instance, when writing the reflective essay on one of the classroom observation tasks, "the learning environment", Esra engaged in descriptive writing only in the context of the high school classroom, since it was the first time she observed an actual classroom. As Ayşe examined the nature of language learning environment, she mainly used descriptive writing because it provided her with a way to illustrate the interaction among the various social components of the school, i.e., the teachers, the students, the parents, and the school administration.

^{dw} My cooperating teacher was talking to me the other day about her experiences when they give bad grades to students. She was concerned. She said she may receive a lot of pressure from both the administration as well as the students' parents to give the student a more acceptable grade. _{dw}

Ayşe used descriptive writing to relate her cooperating teacher's dealings with the administration and parents over the issue of student grades. Then, her descriptive writing served as a springboard for dialogic reflection in which she went beyond description to a deeper examination of the teacher's role.

^{lr} The responsibility for the low grades seems to be placed on the shoulders of the teacher. I find this very troubling. I guess that I will learn how to deal with such problems. _{lr}

In particular, dialogic reflection enabled her to consider the issue of teacher accountability, and then through critical reflection, she was able to perceive the difficult "web of social and political" forces that shape the learning environment:

<superscript>cr</superscript> it seems the teacher is the authority, but this
appearance is not real, they are trapped in a world of
social and political issues. <subscript>cr</subscript>

Critical reflection helped her to realize the social variables of teaching; she developed her understanding of how being a teacher means actually working within the social and political environments in the school.

Her reflections in her 2nd pen/paper portfolio (total 152 pages) took place within the high school context, i.e., during her practice teaching. This clearly demonstrates the role of the context in shaping the nature of Ayşe's reflection: a) total 67 descriptive writing, b) total 35 descriptive reflection, c) total 75 dialogic reflection, and d) total 45 critical reflection.

The reflective experiences were similar in nature in that they asked Ayşe to reflect on lessons that she prepared and delivered and, consequently, both provided her with opportunities to engage in descriptive reflection and dialogic reflection. Ayşe only used descriptive writing when describing problems associated with the presentation of her lesson in her self-evaluation paper. The problems that she described were all procedural issues related to classroom management:

^{dw} There was so much noise after they started that it was difficult to give any further instruction. _{dw}

Ayşe used descriptive reflection to engage with the content of her lessons. For example, when describing the objectives for her mini-lesson, she justified her decision to use a modified version of a textbook exercise in the following manner:

^{dr} I need to adapt that exercise in the textbook because I do not believe that at that level, they can not understand the meaning of abstract words. _{dr}

Dialogic reflection enabled Esra to learn from her teaching experiences by rethinking her teaching methods and choice of materials and activities. Her writing revealed a stepping back from the experience of planning and presenting the lesson, as she evaluated the lesson and suggested possible changes:

^{lr} In general, I think I achieved what I wanted. The only thing that I would have changed was making the format for the adjective exercise more open-ended. _{lr}

Finally, critical reflection enabled her to consider the social consequences of student misbehavior while she presented her lesson:

^{cr} after the presentation, I understood that allowing

some students disrupt the class is affecting others,

something has to be done to protect those others. _{cr}

Through these patterns, we have seen how the context
shaped the nature of Ayşe's reflection. Descriptive
reflection and dialogic reflection occurred where Ayşe
provided justifications for the objectives, planning,
organization of her lesson plans, and as she looked back
upon and critiqued the lessons that she had taught. Ayşe
also admitted that she needed to work on being a better
disciplinarian. Through her reflection on the implications
of student misbehavior, she realized that student
misbehavior not only her ability to teach but also the
quality of the other students' education.

DİDEM

Analysis of Didem's artifacts in her 1st pen/paper
portfolio (total 63 pages), including the student teacher
narrative, and reflection papers on the classroom
observation tasks, revealed: a) total of 59 descriptive
writing, b) total of 34 descriptive reflection, c) total of
24 dialogic reflection, and d) total of 28 critical
reflection.

In Didem's electronic journal, two patterns of single units followed each other: descriptive writing followed by dialogic reflection. With the following quote, both descriptive writing and dialogic reflection would be shown one after the other:

dw I have observed him and watched how he interacts with his friends. He is popular. But, the problem happens when the bell rings, and he is still talking loudly. dw   lr This whole situation makes me re-evaluate what I might do in the future. I realized that between activities, I am going to give them a lot more time to discuss them. lr

Didem realized that she should rethink her approach to classroom management. Through this reflection on the role of the context in teaching, Didem was able to recognize the fact that an approach to classroom management is not a separate entity but rather functions within a particular context and is shaped by that context.

In examining the issue of educational beliefs of her own, Didem used critical reflection as she shared her ideas of how the relationships among the different school communities should be:

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cr a teacher alone cannot achieve success, an

organization among the school, parents and students is

necessary. cr

Didem used critical reflection to address the issue of

collaboration and cooperation in the schools to ensure the

success of the students.

Didem's 2nd pen/paper portfolio consisted of 128 pages

in which she used a) total of 29 descriptive writing, b)

total of 31 descriptive reflection, c) total of 45 dialogic

reflection, and d) total of 33 critical reflection.

As Didem wrote about the additional types of

assignments that her peer did in her peer-evaluation paper,

she mainly used descriptive writing:

dw Another activity she assigned was a dialogue

worksheet to be completed with a partner. This

assignment should have been completed in class and

turned in, but for some reasons several students

failed to do so. dw

Next, in the same paper, she moved to descriptive

reflection. Along with her description of the weekly

practice sheet, she provided justification for its use.

dr One assignment that the students did on every week was a spelling exercise. So, my peer decided to continue with it when she presented her lesson. This exercise had two purposes. First, it required the students to practice English outside of the school. Secondly, the parents must sign them to verify that they completed it. This works as a kind of communication between the teacher and the parents. dr

In Didem's student teacher narrative in her 2nd portfolio, dialogic reflection was the main type of reflection found as she examined her beliefs on language learning and teaching based on both her experiences as s language learner and as a language teacher. Her reflection on her beliefs was characterized by the use of dialogic reflection.

lr I believe that language means communication and therefore language should be taught communicatively. I feel that students learn best when they learn by doing. lr

The assignment of writing a student teacher narrative provided opportunity for Didem to illustrate especially critical reflection (total of 33) because in this assignment she discussed various aspects of language

teaching including language methods. For this paper, she related theory to practice, i.e., how she would apply language theory to her future language classroom. This type of reflection allowed Didem to think about the social consequences of theories of second language acquisition.

> [cr] The teaching methods that are used today are very different from 20 years ago. The methods of second language teaching changed a lot. For the teachers, keeping up of the most recent methods in second language acquisition is very important to helping their students to achieve something. [cr]

Critical reflection enabled her to demonstrate an awareness that language teaching methods are changing over time, and she reflected on how important to follow the research on second language education.

BURCU

Burcu's 1st pen/paper portfolio consisted of 92 pages in which she used a) total of 55 descriptive writing, b) total of 29 descriptive reflection, c) total of 35 dialogic reflection, and d) total of 19 critical reflections.

In her 1st pen/paper portfolio, especially in her reflective essay on "managing errors", a pattern of descriptive writing followed by dialogic reflection was

characteristics. She first used descriptive writing to

provide a description of discipline problems that she

witnessed when observing her cooperating teacher. Then,

through dialogic reflection she explored the possible

reasons behind these behavioral problems and generated

solutions. She used descriptive writing to describe the

class in which there was a major discipline problem:

> dw This class is 7th grade. Form an outsider's point
> of view, it seems the students simply do not know
> anything. Some of them are simply not paying
> attention, walking around or speaking each other. dw

After describing the situation in the class, Burcu

used dialogic reflection, in which she mentioned her ideas

on the management of classroom. She first hypothesized as

to why the classroom management problems existed in the

first place and then provided possible solutions.

> lr For instance, I will not address a student's
> question if they interrupt me. I will let them know
> that it is not an appropriate time. I think that a
> warning in front of the other students will be enough

While this pattern of descriptive writing followed by

dialogic reflection was mainly seen in Burcu's 1st pen/paper

portfolio artifacts, there was also evidence of some units

of critical reflection. For example in her student teacher
narrative, she commented on the social nature of language
teaching and learning, and she highlighted the importance
of building teacher-student relationship:

> ^{cr} The teacher should be familiar with each student,
> and have a good sense of his or her language abilities
> because it will affect the error management. _{cr}

Single units of descriptive writing, descriptive
reflection, dialogic reflection, and critical reflection
surfaced in Burcu' 2nd pen/paper portfolio (total 125
pages): a) total 48 descriptive writing, b) total 39
descriptive reflection, c) total 45 dialogic reflection,
and d) total 61 critical reflection.

In a journal entry, Burcu discussed her ideas when she
joined in a professional meeting. Descriptive writing
enabled Burcu to relate her first experience as an observer
at the teacher-parent meeting.

> ^{dw} During this week I participated to a teacher-parent
> meeting. My cooperating teacher invited me to join in
> her meeting with the parents to discuss their child's
> progress. _{dw}

Burcu then used dialogic reflection. She discussed the nature of the meeting, i.e., how this two sides focused on child's development.

> [lr] While this meeting focused on a specific student's growth, it also showed the importance of collaboration between the teacher and the parent. I learned a lot by participating in this meeting. [lr]

Lastly, Burcu' writing moved to critical reflection as she recognized that the benefits of the meeting went beyond the exchange of information since the meeting helped to promote and strengthen the relationships among the members of the school community:

> [cr] I learned a lot from that meeting. There was a strong feeling of community between the teacher and parents and administration. [cr]

Burcu believed the administrative aspects of teaching such as participation in professional meetings, and the issue of collaboration among the parent-teacher was important to shape the school culture.

AHMET

Analysis of Ahmet's data sources in her 1st pen/paper portfolio (total 53 pages), including the student teacher narrative, and reflection papers on the classroom

observation tasks, revealed: a) total of 69 descriptive writing, b) total of 54 descriptive reflection, c) total of 36 dialogic reflection, and d) total of 26 critical reflection.

Beginning with the first pattern of reflective unit, i.e., descriptive writing, the following discussion presents the nature of this pattern in Ahmet's teacher narrative. In this reflective essay, he used descriptive writing to relate his experiences as a language learner in classroom environment. For example, he described as:

> [dw] When I came to YADYOK, I realized very quickly that my high school English did not allow me to be able to communicate. I was almost incapable of understanding a lot of what was said around me. Over a period of time, I began to understand more and more of what was being said around me. [dw]

Ahmet engaged in dialogic reflection when he examined the differences between two cooperating teachers he observed. He wrote in his reflective essay on one of the classroom observation task "giving instructions":

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Ahmet's critical reflection on the nature of teacher-student relationships, specifically his own personal experiences of establishing connections with the students, occurred in his electronic journal entries. For example, in one journal entry, he talked about a relationship between himself and the students:

[cr] The interesting thing that I have really noticed a growth in is my relationships with students. Now that I have been in the school for a long period of time, I knew several students very well and became familiar with what interested them. I have a relationship with them. [cr]

Analysis of Ahmet's portfolio artifacts in his 2nd pen/paper portfolio (total 135 pages), revealed: a) total of 45 descriptive writing, b) total of 40 descriptive reflection, c) total of 46 dialogic reflection, and d) total of 29 critical reflection.

The second portfolio artifacts were mostly about the student teachers' practice teaching concerns because they

started to present their lessons. The reflective papers
Ahmet wrote revealed mostly descriptive writing,
descriptive reflection and dialogic reflection when
discussed the various steps related with his teaching,
i.e., from planning to actual teaching to reflection on the
lesson and his self-evaluation of his practice teaching.

In his self-evaluation paper, for example, Ahmet began
this paper with a unit of descriptive writing in which he
described the objectives of the lesson, the organization of
the activities and the assessment of the students'
performance. Later, he turned to descriptive reflection to
provide justifications for his choice of activities:

> dr I want the students to express their ideas easily.
> The discussions will give them opportunity to practice
> both listening and speaking skills, and the homework
> will give them writing practice. dr

Ahmet used dialogic reflection to evaluate his lesson,
reflected on why the lesson was successful and suggested
possible alternatives to improve the lesson:

> lr Using photos of famous football players was
> effective because it captured the students' attention
> by trying new and interesting things. I would use
> bigger photos next time. lr

While this pattern of descriptive writing and dialogic reflection were most common in Ahmet's artifacts, there was also few evidence of some critical reflection. For example, in his reflective paper on "managing errors" he used critical reflection. While addressing the social nature of the classroom, he commented on the effects of teachers' approaches to error correction:

> [cr] In order to be effective, teachers should be careful while they correct the students. Students will be discouraged if they are corrected for every mistake. [cr]

His critical reflection enabled him to examine error correction from the perspective of a teacher's relationship with her or his students.

Reflective thinking was an essential aspect of the portfolio preparation process. According to Chiseri-Strater (1992), portfolio constructors realized "the process is the product and that learning holds value in itself" (p.66). In each of the examples given by the student teachers, they repeat what Kieffer, Faust, Morrison and Hilderbrand (1996) had to say about reflection: "when a student composes oral and written reflections exploring the meaning of portfolio items, a mere collection of

selected items is transformed into a potentially powerful document representing that student as a self-aware learner" (p. 12).

Additionally, the interviews conducted at the beginning and the end of the study also revealed that portfolio preparation process has supported the finding of portfolios enhancing the participants' reflective thinking. In other words, the process of putting together the portfolios helped student teachers to be critical in their teaching practice, to think their strength and limitations as developing teachers. Evidence from this study suggested that all participants highly valued reflection on teaching as a vehicle for professional development. supporting Dewey's notion, these student teachers indicated that it helped them to extend their thinking beyond the 'what' to the 'why'.

The next section addresses their views on the value of reflection on their professional development through the voices of the student teachers during the interviews. One participant made the following comments:

I see a lot of value in reflecting on my teaching. It gave me an opportunity to go back and think about what happened, and what I could have done differently. I

think this is very important in order to improve

future lessons. (Esra)

Reflecting on teaching also allowed them to see growth

in their teaching:

I started to explain things more clearly. I still need

to work on it, but I am better from where I started.

With the reflections we are able to build on it.

(Burcu)

They realized that is it not the activity of teaching

only, but it is the experience of reflecting on it that

determines its value in the learning process (Johnston,

1994). The comment below highlights this view:

The most important part is the reflection on it

because we're able to see what we do and why we do it.

So we need to continue to reflect on it and see why

we're doing this, and it's something that we all need

to learn to do. (Ahmet)

It (*portfolio*) helps you to get to see how we

changeover the semester. And that's one of the

qualities of a good teacher. You have to see something

and then change it. (Didem)

The student teachers perceived the portfolio to be very helpful in their professional development. Looking at teaching from multiple perspectives helped them to analyze their teaching beyond the performance of technical skills. Moreover, keeping the reflective journals has proven to be an important link between theory and practice for the student teachers as they draw their thoughts together at the end of practice teaching. the weekly journal entries written by the student teachers not only allowed them to capture their thoughts and growth along the year, but also provided an opportunity for them to document growth of their practice chronologically. The participants noted that writing about the meaningful events helped them to think deeper and more critically about their teaching by breaking the lesson down into parts. One student teacher noted how he felt about the writing: "As I wrote about what went on, I thought of several things which I hadn't thought of before." (Ahmet, journal # 5).

Furthermore, it provided a way for them to think clearly and remember what happened as Didem stated that "by actually writing your thoughts down, you can think about it more clearly and organized. It will stay in your mind longer and also gives you something to look back on." (Didem, journal #4)

Portfolios served as a vehicle for student teachers to reconsider and reevaluate their views of teaching and learning in light of new learning experiences. The development of the portfolio is a constructivist process that requires student teachers to reflect and critically examine their own beliefs and ideas about teaching and learning. As Perkins (1986) stated, central to the vision of constructivism is the notion of organism as active: engaging, grappling, and seeking to make sense of things. The development of a personal teaching philosophy required student teachers to think about their knowledge, understandings, ideas, and beliefs about learning and teaching. Portfolio development provided the vehicle through which they can explore their understandings of learning to teach, through the development of different versions of their teaching philosophies. According to Hoban (1997), student teachers should be encouraged to be metacognitive and become more aware of how they learn in teacher education courses with the intention of informing their decision-making as they construct their personal pedagogies.

The student teachers found the portfolio allowed them to be reflective and make connections between theory and practice, which helped them think about their strengths and

weaknesses in becoming a teacher. The reflective

narratives they wrote showed evidence of student learning,

which is consistent with previous studies (Borko, Michalec,

Timmons & Siddle, 1997; Loughran & Corrigan, 1995; Snyder,

Lippincott & Bower, 1998; and Zidon, 1996). They indicated

that student teachers felt the process of preparing

portfolios allowed them to reflect on their growth and see

connections between what they had learned in the classroom

with what they were learning in the practice teaching.

This study also found that student teachers constructed new

meaning with what they already knew by merging new ideas

they developed as a result of the portfolio preparation

process with old ideas and experiences, which is consistent

with how the constructivist theory supports the development

of portfolios (Anderson & DeMeulle, 1998; Trube & Madden,

2001).

Moreover, results from this study supported the

assumption of Vavrus and Collins (1991) who have suggested

that engaging in the process of portfolio development

appears to encourage teachers to become generally more

reflective about their teaching practices. Hurst, Wilson

and Cramer's (1998) study also reported that 71% of the

student teachers indicated reflection was beneficial in the

portfolio process, which supported the present study's

findings. They described teaching portfolios as "visual representations" of teachers, with the content necessarily varied, determined by the individual's teaching philosophy, values, and viewpoints" (p. 1).

As previously discussed in the literature review, Hatton and Smith's (1995) study investigated the extent to which specific experiences promoted particular types of reflection. They proposed an operational framework that viewed reflection as a hierarchical developmental process by which the preservice teachers start with "relatively simplistic or technical type" of reflection, moves through forms of reflection-in-action (descriptive reflection to dialogic reflection to critical reflection) and ultimately reaches the stage of reflection-on-action. Regarding the role of context, Hatton and Smith (1995) indicated that "different contexts in teacher education may lend themselves more to one kind or level of reflection than another" (p.35). The findings of the present study did support this view of reflection.

In addition, technological possibilities of electronic portfolios allowed student teachers to make nonlinear, dynamic representations of their teaching philosophies. When developing their electronic portfolios, they used a

variety of multimedia artifacts to present information from their coursework and their field experiences. Specifically, they used text-based descriptions of activities, reflective statements on activities, pictures of themselves and their peers, pictures of their students, video recording of their practice teaching, samples of their students' work, and samples of worksheets. According to Morris and Buckland (2000), by compiling the portfolios in an electronic environment, student teachers were able to use the hyper linking capabilities to organize the presentation in such a way that demonstrated their unique understanding of their own learning. Through the hyper linking process, student teachers could make connections between their coursework and field experiences, between their claims, evidence, and justification statements, which results in an interconnected presentation of their learning experiences (Morris & Buckland, 2000).

In sum, reflection through portfolios has been found to enhance professional development by encouraging teachers to be reflective about their practices (Freeman, 1998; Freidus, 1998; Brown & Irby, 1997, Yagelski, 1997), and served as a tool for growth, which can lead to an improvement in instruction as well as in student learning (Cole, Ryan & Kick, 1995). Findings from this study also

supported the views expressed by Shulman (1992) that portfolios can document the unfolding of teaching and learning over time as well as provide teacher candidates the opportunity to engage in analysis of what they have done. Additionally, the value of reflective thinking, a theme which was constantly revealed in the data, further validated the necessity for preparing reflective teachers supported by a number of research studies (Calderhead, 1989; Clift, Houston & Pugach, 1990; Cruickshank, 1985; Smyth, 1989; Valli, 1992; Zeichner & Liston, 1987).

Summary of Part 1

Part 1 examined the ways in which portfolio preparation process influenced the development of reflective thinking in student teachers. Statistical analysis of data showed that the process of preparing a portfolio provided a unique and useful approach to improving reflective thinking. The student teachers applied more descriptive writing in their 1st pen/paper portfolios whereas more critical reflection in their 2nd pen/paper portfolios. Interestingly, their electronic portfolios did not show enough evidence in terms of utilizing more critical thinking because the student

teachers were more concerned with the appearance of their portfolios rather than the content of the portfolios.

Reflection took place in the portfolio process throughout one year. The student teachers reported that writing reflective papers helped them to examine themselves and their practice, organize their thoughts or identify their strengths and weaknesses. Through these papers, the student teachers saw any change or growth they might experience from course work and practice teaching. This is very important because student teachers could revisit their philosophy statements at the end of their practice teaching and saw what they had thought at the beginning. In this way, they are better able to look at their beliefs as they were formulated at the beginning of their practice teaching and compare them with those based on real classroom practice to see if any change has occurred.

Student Teachers' Perspectives on the Effects of Pen/Paper and Electronic Portfolio Preparation on Their Professional Development

In order to find out the perspectives of the student teachers regarding the impact of portfolio preparation on their professional development, a content analysis by using Miles and Huberman's model (1994) was conducted to identify

conceptual themes, i.e., *what* the participants mainly talked about in interviews. First the interviews were transcribed, and then from the content analysis of pre- and post-interviews, conceptual themes were established that indicated student teachers' perceptions. Under each theme, supporting quotes from individual participant were listed and discussed. Some themes seemed to overlap one another, but it was impossible not to mention one theme within another in order to support the result. The reader will find some themes fully discussed in one section while only mentioned in another.

The findings will be reported in two sections. First section is about the pre-portfolio construction phase when student teachers were introduced to the portfolio and observation of cooperating schools. Second section is about the post-portfolio construction phase when the student teachers were finalizing their portfolios and sharing their practice teaching experiences. In both sections, student teachers' perceptions about electronic portfolios were also reported.

Pre-portfolio construction phase

The pre-portfolio construction phase was the beginning of the 1st semester when student teachers started to go to

cooperating schools to observe, the same semester in which data collection also began. In this phase, pre-interviews were conducted with the student teachers. In the content analysis of these interviews, two themes on early beliefs about portfolio preparation emerged: Portfolios were tools for job search; and Portfolio preparation was overwhelming and time-consuming process.

Portfolios are tools for job search: The portfolio as a 'tool for job search' is the term used by student teachers in pre-interviews to express how they saw their portfolios. Four of the five student teachers said that they would use it as a "fancy" document in their search for a job.

When asked what would be the role of portfolio in the future, Didem immediately replied, "It would be a tool for me when I start to look for a job. I am going to make it attractive so that the employer will like it." As she began her portfolio, Didem was well aware of the need to complete her portfolio in order to receive her degree. Yet she also wanted to be able to use the portfolio "to show off" at job interviews. It was this goal at the beginning that made the portfolio project more tempting for Didem. She explained:

I want it to be a fancy portfolio, and I want to have something that I could take to job interviews. It will show that I had a different experience from other teachers when I applied for the job.

Didem also saw her electronic portfolio as a way to demonstrate her knowledge of teaching English as well as a way to show her technology skills.

Esra also believed that preparing a portfolio "is a good idea, but I am sure it would be very useful in finding a job, because at the end, you have a chance to show what you did in your teacher education to prospective employers."

Burcu also visualized herself with her portfolio in a job interview situation "I want to put my portfolio in front of that person who is interviewing me. I want everything in there to be nice. I want my portfolio to put me in the market as a teacher." Furthermore, she said, "right now, my goal is to prepare my portfolio with my good stuff so that I can go out there and present myself and get a job." She expected the portfolio to present her and open the doors for job opportunity.

When discussing about electronic portfolio, Burcu said "I think having an electronic portfolio will definitely

help when getting a job because the principal of the school can see that I can use any kind of technology easily, and it makes me one step ahead of other applicants."

Ahmet wanted to make sure that he met course requirements to receive his degree. He was very competent in computers and had his own web site, so the pen/paper portfolio he would prepare was not so important for him, but his electronic portfolio was important for getting a job. He said, "I definitely put my best work in an electronic format, because I know none of the applicants applied for the job would have such a technological resume."

One student Ayşe, on the other hand, indicated that the portfolio was not for an employer, but for themselves. she would use it for her own purposes. It would help her remember what worked and did not work in her practice teaching:

> I do not believe that it is for other people. I do
> not see my portfolio as a tool to find a job. But I
> see it as a tool for myself to look at it when I am a
> teacher, to look what I did right or wrong. Actually
> it shows how I develop as a teacher.

Student teachers, therefore, expressed a big advantage over other teacher candidates in the job process with their portfolios by showing the future employer the knowledge and the skills they learned in their teacher training. This finding is consistent with the findings of Hurst, Wilson and Cramer (1998) and Anderson and DeMeulle (1998), which suggested that the portfolio would help them to obtain a teaching position when they applied for a job.

Portfolio preparation was an overwhelming and time-consuming process: Student teachers knew that the portfolio preparation process would not be an easy one: in their terms, it was going to be an "overwhelming" and "time-consuming" process. They were introduced to the requirements of practice teaching and observation of schools as well as to the requirements of portfolios when the data collection started. Ayşe's sense of frustration was evident when she said, "I don't know where to begin." Burcu expressed similar distress. She remarked, "I knew that we would prepare a portfolio for school experience course because my friends told me before. But I am really scared about this project." Ahmet was also uncertain: "It (portfolio) seems an overwhelming activity." Didem's reaction was even more dramatic: "I am not sure what I will put in there. I am a little bit scared by this idea.

There is no way I could come up with a professional portfolio."

The student teachers in this study also expressed their concerns about the amount of time involved in portfolio preparation. Comments from them during the pre-interview revealed some frustrations about developing their first portfolio in the first semester. Ayşe expressed her feelings by saying that

> Finding and preparing good material for this portfolio is going to be hard because I am not sure how to make them. I think in the first couple of weeks it will be hard to figure out what and how I should prepare them.

Burcu expressed her frustration with the time her portfolio took especially in writing student teacher narratives. She stated "writing teacher narrative and journals will be a little bit time-consuming. You need to go in depth, be clear, just writing these reflections will take a lot of time."

On the other hand, Ahmet dealt with this time problem by putting a specific deadline for himself to complete his portfolio. This was intended to help him stay on task. He concluded that "I want to be right on schedule with my portfolio and everything else I have to worry about. So,

time will not be a problem because I know when I will do it." Esra, like Ahmet, saw the need for schedule as a means of facilitating the portfolio preparation process. "When I see the work ahead of me on this portfolio, if I make a schedule and try to stick to it, I feel like I can get everything done on time."

Participants also reported that the amount of time spent preparing the electronic portfolio would be even more time-consuming particularly with all the different technologies used. They believed learning the skills needed to develop the electronic portfolio would take extra time away from academic content.

One student teacher, Didem, indicated that the electronic portfolio should be a part of all classes within the program so that they could prepare it for the whole year. She said, "I think it is really necessary because then we can use different technology in different classes, and also we can prepare the portfolio not only for one course but for the other courses. I think each class should have the time to do it."

On the other hand, when asked how much time he might spend on preparing his electronic portfolio, Ahmet said "Very little. I will be honest about that. hopefully I

will spend a little bit of time since I know a lot about computers, but I think I will spend more time on deciding what kind of things I will prepare rather than how I will prepare."

The participants also emphasized that working on the appearance of the portfolio made the process even more time-consuming. Student teachers were very concerned about how their artifacts would look and often talked about the need to type their artifacts. Esra was especially concerned with typing in order to improve the appearance: "I am typing them on the computer because it looks better." Like Esra, Burcu also saw the need to make revisions based on appearance. She used the term "polished," which means anything in the portfolio "that needs to be changed or corrected. I want no mistakes in it. I want it polished and look nice."

It is evident that developing both pen/paper and electronic portfolio were seen overwhelming and time-consuming by the student teachers at the beginning of the project. The participants reported that one of the most time consuming part of the process would be preparing the required portfolio items and the appearance of the portfolio. Additionally, they also revealed that finding

time to develop the necessary technical skills was a challenge, and would require more attention. Zidon (1996) also found that fore the student teachers in her study, time was a limiting factor when preparing their portfolios. A lack of time to prepare the portfolio was the major challenge student teachers faced as reported in the literature (Dutt-Doner & Gilman, 1998; Harris & Curran, 1998; McKinney, 1998; Stone, 1998). Also, consistent with studies conducted by McKinney (1998) and Piper (1999) on the use of electronic portfolios, many of the difficulties on the part of student teachers in this study dealt with technical difficulties with hardware and software.

Post-portfolio construction phase

The post-portfolio construction phase was after the student teachers completed their portfolios at the end of 2nd semester. They reflected upon their experiences and thoughts about portfolios in their post-interviews. The content analysis of these interviews revealed five aspects of the portfolio construction process: support; collection of best work; opportunity for continuing learning; the development of technological skills and reflective thinking.

Support in the form of collaboration

The student teachers cited difficulties with the portfolio preparation and sought solutions to those problems. One solution came in the form of support from their classmates and from the researcher herself. These student teachers revealed that their portfolio preparation process was collaborative with support from each other as well as from faculty members and the researcher. This agrees with what Burke, Fogarty, and Belgrad, (1994) had to say about collaboration. She says, "though schools usually focus on students working alone, the real world allows and encourages people to talk, ask questions, get help and receive feedback" (p. xvi). The student teachers in the present study talked with each other, their cooperating teachers and the researcher. For instance, Didem explained that the help and support she received from her classmate Ayşe was important to her success:

> She helped me because I was having problems with the portfolio, especially with the electronic journal. I talked with her, asked her what she wrote. She described what she did and it helped me in writing my reflective statements.

Didem was not the only one who asked for help from Ayşe. Ahmet also said "with technology I was okay but with the other stuff I think I need help especially with the reflection section. But Ayşe even edited what I wrote so it saved my time."

Technical support was another type of support they received from each other and the researcher. They felt that the technical support from one of their classmates was very helpful in order to be successful in creating their electronic portfolio.

Ayşe said "I think a lot of support came from Ahmet, technological support. I still need to learn some programs, but having somebody like him there with me, who really knows computers, helped me a lot." Didem also stated "I have a basic knowledge of technology, but Ahmet did a great thing by showing us simple things to do. For example, scanning information to the electronic portfolio and learning how to link things to each other helped me to learn many things."

The ability to collaborate even on a small scale, is becoming one of the main prerequisites of a modern society as Fullan (1993) indicated. Student teachers in this study reported that support from peers was very important in

their success in developing pen/paper and electronic portfolios.

Working with peers gave student teachers an opportunity to view ideas and experiences from a different perspective. Student teachers' verbal interaction with each other is not only stimulating, but also it acts as a principle catalyst for reflective development as Korthagen found in his study (1992). Peers acted as consultants with each other and participated in the sharing of knowledge and information.

They also collaborated with the university supervisors and the researcher herself. The researcher provided technical support to them by scheduling individual lab hours for help or providing assistance during chosen lab hours. Student teachers expressed how they felt the lab hours helped them with the development of the electronic portfolios. As Burcu said, "I think you (the researcher) did a good job for organizing those lab hours for us."

As evidenced, collaboration and support are essential elements in this project, which is consistent with the findings of other studies. For instance, Kieffer, Faust, Morrison and Hilderbrand (1996) study also supported the notion of collaboration for portfolio users. They

indicated that portfolios provided opportunities for student teachers to gather a variety of responses (support, celebration, questions, comments, criticisms) by communicating to peers and instructors either orally or through electronic journals. The findings of this study also supported an assumption made by Glasser (1993) that student teachers "would engage in reflective thinking if they were allowed to establish their own goals, create a plan to support those goals, and were supported by peers and university supervisors willing to share and work together toward the same goals" (p.34).

Collection of best works

Student teachers have revealed another aspect of portfolio preparation that agreed with many other researchers. They saw their portfolios as a physical product of their own that showed their professional development. They wanted to document their practice teaching in an organized way, and the portfolio provided them with an opportunity to create a professional collection of materials that represented an important period of their training and development as a foreign language teacher. Ayşe's words provided the code for this section by saying that: "the portfolio shows your *best*

works . . . shows where you started and where you are now at the end of the year." She thought that

> I think I have grown as a teacher and a learner. I see this in my lesson plans I put in my portfolio. The lesson plans in the beginning of the semester were not as creative as the ones toward the end of the semester.

Ahmet defined his portfolio as "something that shows my best work. Things that I created, they were creative things." He added that the lay out of the portfolio had to "be in an organized manner, look good, and professional."

Didem wrote in one of her journal entries "it (portfolio) helps me to reflect back . . . I still go back to the first day of my practice teaching to see the mistakes I made and to avoid them in my final presentations." It was the opportunity to examine her practice in the context of the chronological documentation through the portfolio that made her see herself and be aware of what she was doing in her practice teaching.

Esra said in her pre-interview that she wanted the portfolio "help me organize what I am doing as a student teacher." She later said in her post-interview that she

would go back to her portfolio when she started teaching, and use the lesson plans to help her.

Burcu also said in her post-interview that preparing portfolio was a good process for her:

Whether I teach or not, my portfolio is going to be a reference for me. It helped me to be organized because I can really be a much-disorganized person. I learned to organize myself by doing this portfolio.

In addition, the student teachers thought that portfolios were personal creations. They remembered their first portfolios, which were less personal because it was mainly based on the assignments that the university instructor required. At the beginning, it was seen as an activity for the course. But at the end of the year, the student teachers personified the portfolio and made it a living document. They agreed that especially their second portfolio "reflect" the creator, and this realization personalized the portfolios. Didem said, "it reflects you as a person and as a teacher." Ahmet said that the portfolio "is me, my personal thing. It is meaningful now, because it shows me." Esra made a statement in her post-interview when she talked about what the portfolio represented to her: "the portfolio is who you are and what

you do professionally. Burcu expressed a similar opinion, "I find it (*the portfolio*) personal reference which shows what I am. It is more than a book of class." Ayşe knew that her first portfolio was simply an assignment. However, in her post-interview her feelings toward portfolio changed as she revealed, "it represents me."

These student teachers revealed an enthusiasm about portfolios: the portfolio is personal, and representative of the person who prepared it, and it is the collection of "best work." The notion of best work is valued by other researchers including Calkins (1994) and Graves (1992).

Furthermore they expressed a sense of pride in their finished product. For example, Ayşe said, "for me personally, the most enjoyable part was the product. Seeing that completed portfolio made me proud of myself." She was proud of all her lesson plans because "they showed most of the abilities she had." She tried to incorporate music and video into her lessons, and her presentations received good feedback from her supervisor. However, she was the only one who was a little worried about her portfolio. She said "I cannot say my portfolio looks wonderful, or it is the best job. It is just okay. I completed it, but it needs revisions to look professional.

She was sure that it was all she could do in this busy semester. Didem also said, "at first I thought I don't want to do this portfolio, with all these practice teaching requirements, but once you finished it and see the results you are proud of yourself that you can do it."

Burcu, for example, was very proud of her portfolio. She had found her activities rewarding, and in her opinion, so did her supervisor and students. She concluded that:

I want you to know that although at one point, I thought I made a mistake by signing up for this electronic portfolio project. But now I am thankful I did it. I know that it was often challenging and sometimes frustrating, but it was well worth it, especially if I look back at it months later and will still be proud of my work.

Ahmet also stated explicitly that the end product of the portfolio was satisfying for him: "there is nothing in here that I am ashamed of . . . I feel it describes me best but I am not saying this is a perfect portfolio, but it is a good one. I have a lot of confidence in it."

Esra said that "I would like to add that I feel fortunate to be in this group. I feel that it is very useful and something that many more students should do. I

have one advantage over others who have no knowledge of preparing a professional portfolio."

The student teachers accepted the responsibility that this portfolio was reflection of themselves and that the artifacts placed within it reflected their skills as teachers. Arter and Spandel (1992) said that ownership implies control over what goes into the portfolio and that ownership is a big responsibility for the portfolio constructors. These student teachers said from the very beginning of this study that the portfolios "are my best work that represents me as a person," or "a unique way to show my accomplishments." The use of "me" in these quotations actually shows the sense of ownership felt by the student teachers. This finding is consistent with the findings of other studies that having a portfolio (traditional or electronic) allowed student teachers to feel a sense of accomplishment in the finished product (Dutt-Dover & Gilman, 1998; Johnson, 1999; McKinney, 1998).

Opportunity for ongoing learning

Learning was evident throughout the portfolio preparation process. However, what was becoming more evident to these student teachers by constructing a portfolio was the "ongoing" process of learning (Wolf,

1989). Each student teacher engaging in the portfolio preparation seemed to experience a sense of professionalism as the semester progressed. However, they did not understand the process they were undergoing at the very beginning of this project. It was not until they started to prepare their artifacts that their understanding of the portfolio construction increased. They recognized exactly what was happening in terms of professional development when the portfolios were completed. Ayşe's view of the portfolio also changed as she talked about why it was prepared:

> I prepared items for the course first and put them in the portfolio. But then I realized what I have done is something valuable, I learned from it (*portfolio*) and it will affect my teaching in the future because I see my growth in it.

Esra also was not sure about the purpose of preparing a portfolio at first, and said she believed it (*portfolio preparation*) was a time consuming process. But then she realized that the purpose of the portfolio preparation was " to increase our awareness of what we learned in schools and to show them what we observed and which aspects of this observation is beneficial for us."

Didem also said in her pre-interview that she was
preparing the portfolio because it was a course
requirement. But in her post-interview she said that she
was really surprised when she completed her portfolio
because she believed that her sense of being a teacher had
changed. She said that she understood what the purpose is:

> The purpose is to report what we did in schools, what
> we learned, how we changed throughout the year. it
> was a combination of what we did and wanted to do.

Burcu also mentioned "portfolios are very useful. For
example; it is also a kind of self-evaluation on what we
did so far. I can say that the purpose behind the
portfolios is generally to show what we did so far in our
practice teaching schools and to get some conclusions about
what we can do also in the future."

All of the participants saw their portfolios as a good
resource for displaying their professional development. In
addition, specifically, portfolios contain the teacher
narrative section that is specifically related to
professional development. This section makes powerful
statements about the student teacher. It states what an
individual believes, and the remainder of the portfolio
shows how that student teacher relates his or her practice

to their philosophy. Student teachers stated that the portfolio helped them reveal their professional beliefs about education in general, and about foreign language education, in particular. Didem said in her post-interview "my beliefs of education are important. It is a combination of who I am and what I have learned. And I believe that culture must be taught within foreign language courses. You must include culture to your activities." And, in one of her lesson plans, she used examples from English speaking countries. She not only stated what her beliefs were, but also backed up those statements with her practices.

These student teachers developed their portfolios over one year, and especially over the course of their practice teaching, and their portfolios emerged from this process of collecting evidence that represented their growth. This process does not end with the graduation; as the student teachers mentioned they also plan to add items to their portfolios that show their new experiences and new knowledge. Therefore, the portfolios will continue to grow and change with their new experiences, and it gives them an opportunity for an ongoing learning and professional development

The Development of Technological Skills

Through the development and maintenance of an electronic portfolio, student teachers used technology throughout the second semester. Preparing an electronic portfolio enhanced student teachers' professional development in terms of increased technology knowledge and use. The participants seemed more proud of their electronic portfolios than their pen/paper portfolios. Even though at the beginning they seemed to be overwhelmed by the idea of preparing an electronic portfolio, at the end they mentioned that preparing it helped them develop their technical skills. For instance, as Burcu said "It was just the fear that was holding me back. But now, in terms of benefits from technology, I feel more confident, and I can now say that I can use a computer." All student teachers in this study agreed that they had learned new computer skills in the process of preparing their electronic portfolio. They reported learning how to import and download internet files, how to use a scanner or how to create hyperlinks between the portfolio items. When talking about her experience with the scanner, Didem stated, "I learned how to scan. I had never used a scanner before. Now I feel comfortable using a scanner. That is definitely a skill I learned by doing this portfolio."

Esra described what she had learned about technology,
especially videotaping, and how she felt it was going to
help her in her future teaching. She said:

> For my electronic portfolio, I decided to videotape
> the lessons I taught in practice teaching. So, I
> learned how to set up the video cameras. Learning how
> to do these things helped me to understand more about
> how technology can be integrated into language
> teaching. After I graduate and when I have my own
> classroom, this knowledge will help me to videotape my
> classes so that I can watch myself. This will help me
> understand what skills I still need to develop.

Ayşe also described her view of technology by
explaining the types of technology applications she was
able to use and the future role technology use would have
in her role as a language etcher:

> To be competitive in any market, a person must know
> how to use computers or any other technological
> applications. I took basic technology courses. But
> to finish my electronic portfolio, I need to learn
> PowerPoint and Hyperstudio. As a future teacher, I
> plan to use computers in my teaching.

Ahmet used different types of technological applications such as Hyperstudio to show his competency in technology. He said "this portfolio is an effective evidence of knowing how to download and upload files to and from a web site. It is very important now because of online or distance education."

Burcu was very proud of the PowerPoint presentation that she created for her electronic portfolio. She described what she learned about PowerPoint from doing this presentation:

> I saw that PowerPoint slides are more useful than the traditional OHP. This program provides color and action to any lesson. Using sounds, pictures and even video clips add excitement and interest to a lesson. This will help students motivate and participate more.

Didem stated that even though she got much help from Ahmet, she also developed her technology skills:

> I think I learned a lot. Even if it was just typing a word or having two or three hyperlinks, I really learned a lot. At first I really had no idea how to complete it, but I finished it and it was a learning experience.

The student teachers all reported that preparing pen/paper and electronic portfolios were worth doing. They felt a sense of accomplishment in having a complete product of that they have learned and done. They also felt that they developed or enhanced their technology skills as a result of participating in the electronic portfolio project. This finding is in consistent with the findings of McKinney (1998), Richards (1998) and Piper (1999), which suggested that student teachers indicated a positive attitude toward the use of electronic portfolios in their teaching. They also supported the idea of satisfaction in having such an electronic product.

Reflective Thinking

Reflective thinking facilitates improvement in professional practice by helping student teachers examine what they are actually doing in the classroom, such as how they teach, or how they assess students' understanding or how they plan lessons. Reflection in the portfolio helps them to see themselves better. Data from the interviews revealed that reflecting on portfolios enabled the student teachers to (1) examine themselves and their teaching practice; (2) organize their beliefs and thoughts in theories and practice; and (3) initiate, reflect and

improve their teaching and themselves. Burcu said, for instance, "My reflections are there. They will learn more about why I believe what I do in the classroom." Moreover, the student teachers said that their portfolio reflection helped them to organize their beliefs and thought about the profession in terms of practice and theories. For instance, Ayşe said that "to reflect on yourself as a teacher, you need to think about your beliefs that you were taught in your teacher training." Burcu said that her reflections in the portfolio helped her to "structure" her thoughts. She said, "it (the reflection) did help me because there are so many things given you at your practice teaching, so it helped me to structure my thoughts in foreign language methodologies." Reflective thinking enabled the student teachers a perspective for seeing themselves as teachers, to articulate the strengths and weaknesses of their performances as teachers. This theme was also one of the sub questions of the study; therefore, it will be discussed in greater detail in the next section.

Summary of Part 2

    This part reported the perspectives of student teachers on portfolio preparation. Results of data analysis indicated that student teachers generally

responded favorably to portfolio preparation. It identified several themes, indicating how the student teachers perceived the role of portfolio before and after the portfolio construction. In pre-portfolio construction phase, student teachers saw the portfolio as a tool that serves them in the job search process. The portfolio audience took an important role in the process. The student teachers said in their pre-interviews that they were producing evidence with the notion that someone with the power to provide them with a job would be reading and viewing their portfolios.

Initial interviews revealed expectations about portfolios, but also it created a sense of being "overwhelmed" by it. They believed that portfolio preparation was an overwhelming and time-consuming process, which needed support from faculty and classmates. When asked about the purpose of the portfolio in pre-interviews, the student teachers said it was to get a good course grade and meet graduation requirements.

In post-portfolio construction phase, they believed their portfolios were collections of materials that showed their personal and professional development. The student teachers cited difficulties with the portfolio preparation

and sought support from their course instructors and their classmates. However, they did not work alone; they collaborated with each other. They discussed with each other the ideas they had and offered advice to one another. Collaboration was an important practice during the portfolio preparation process, and this finding coincides with the findings of others who have viewed collaboration as a productive practice (Kieffer, Faust, Morrison & Hilderbrand, 1996; Graves, 1994; Routman, 1994).

In their post-interviews, student teachers also reflected upon their portfolios. They looked closely at their strengths and weaknesses. They were actually proud of their portfolios and what they had achieved, especially when they finished their electronic portfolio.

They also indicated that portfolio preparation process was an ongoing developmental process. In the end, they admitted that the portfolio preparation process did not actually finish. As Burcu said "it will never be over. There will be more to add and more to change as time goes on." For these student teachers, the portfolio preparation process provided them with the opportunity to monitor their professional growth.

The Impact of Using Technology in Portfolio Preparation on the Attitudes and Competency Level of EFL Student Teachers

As detailed in the previous chapter, there are two sub-questions which address (a) whether there are any differences between student teachers' technology competency levels before and after the electronic portfolio preparation; (b) whether student teachers' attitudes towards use of technology have significantly improved during the first semester and second semester. Therefore, this section is divided into two parts, one on technology competency and one on attitudes.

All the student teachers had computers at home, had Internet access and e-mail addresses. One student teacher (Ahmet) had his own web page. Question two in the demographic section asked student teachers how often they used computers and internet, and required them to tick the appropriate option which indicates their frequency of computer and internet use on weekly basis. All of them indicated that they used computers and the Internet more than five times a week.

Student Teachers' Competency Level in Technology Use

In order to determine whether there was a change in student teachers' competency in technology use before and after the electronic portfolio development, The Technology Proficiency Self-Assessment Questionnaire (TPSA) was administered at the beginning of the year before they started to prepare their electronic portfolios, and at the end of the year when they gave in their electronic portfolios. The Wilcoxon Matched-Pairs Signed Ranks test was conducted to measure changes in the scores on the two questionnaires. Table 4 presents the means and standard deviations, and changes in the subscale scores.

Table 4 *Means and Standard Deviations at Pre-test and Post-test*

	Pre-test		Post-test		
	Mean	SD	Mean	SD	p
overall competency scale	65.80	19.51	87	10.48	.043*
e-mail	15.60	5.32	17.40	.54	1.43
World Wide Web	18.40	6.61	20.30	2.73	1.75
Integrated applications	10.40	4.95	21.70	3.63	.042*
Integrating technology into teaching	13.80	5.26	12.60	4.50	.035*

p<.05

The results of the test indicated a significant growth on overall competency scale (Z=.043, p<.05), which indicated that preparing an electronic portfolio developed technological skills of student teachers. All of the participants at post-test showed a significant increase in their technology competency.

Among the four subscales of the TPSA, student teachers scored highest on WWW and lowest on integrated applications in their pre-test. The highest score on WWW suggested that before the electronic portfolio project, they felt confident in using an Internet search engine to find Web pages related to their subject matter interests, to use WWW to find educational sources, to create their own Web Page, to keep track of Web sites they had visited, and to find primary sources of information on the Internet that they could use in their portfolios. The lowest score on integrated applications indicated that before the electronic portfolio project, they did not feel confident in using a variety of multimedia applications, in creating database of information or in using the computers to create a slideshow presentation.

After completing the electronic portfolio project, among the four subscales of the TPSA, student teachers scored highest on integrated applications and lowest on integrated technology into teaching in their post-test. Even though in their pre-test, they didn't feel very confident in their ability to use integrated applications such as a spreadsheet, creating a database, and saving documents in different formats, in their post-test, the confidence in using such applications were increased. However, interestingly enough, there is a decrease in their competency in integrating technology into teaching. This finding may have two possible reasons. This may show that they have become more critical of their ability to integrate technology into teaching when they finished their program. This may also be due to a lack of knowledge about and/or lack of training on computer technology use in language instruction. This may be interpreted to mean that teachers were not sure whether they would use computer technology for teaching purposes, as they did not have much knowledge about how to use them in teaching. Perhaps they perceived computer technology resources as a support tool rather than a tool for direct instruction. They felt that having basic knowledge of computers is insufficient to teach with computers in the classroom. This means that

teacher education programs need to take seriously teachers'
concerns about their lack of computer knowledge and provide
more training.

To triangulate the findings, 2-independent samples T-
test (Mann-Whitney U) was also conducted (on the gain
scores) between two groups who prepared electronic
portfolio and who did not. The group (5 participants) who
did not prepared electronic portfolio was selected randomly
among the senior student teachers. According to non-
participant student teachers' responses given at the pre-
questionnaire, all of them also had computers at home, had
Internet access and e-mail addresses. All of them used
computers and the Internet more than five times a week same
as electronic portfolio group.

Responses to questions revealed a significant
difference in competency between student teachers who
completed electronic portfolio and who did not ($z=.032$,
$p<.05$) as shown in Table 5.

Table 5 Mann-Whitney U-*test results for overall competency and sub-scale scores between two groups*

scale		mean	p
overall competency			
	electronic	7.1	.032*
	non-electronic	4.2	
Sub-scales			
e-mail			
	electronic	5.2	1.2
	non-electronic	3.9	
World Wide Web			
	electronic	5.3	.80
	non-electronic	4.7	
Integrated applications			
	electronic	7.3	.021*
	non-electronic	4.8	
Integrating technology into teaching			
	electronic	6.1	.91
	non-electronic	5.9	

p<.05

The results suggested that student teachers involved in the electronic portfolio project had higher competency scores in the use of computers than those who did not. Further, the findings also implied that since preparing an electronic portfolio required different technological applications, the project group scored high on the subscale of integrated applications than the non-participant group.

Furthermore, an examination of the student teachers' responses in the interview conducted after the portfolios were completed provided additional support for the effectiveness of preparing electronic portfolios in developing student teachers' competency levels toward technology. The questions investigated the student teachers' ideas about the use of technological applications and how they plan to use it in their future classrooms. The qualitative data suggested that after completing the project, the student teachers became more aware of the applications of the computer technology in learning and teaching a foreign language. For instance, when asked about how they felt about using computers in general and in language teaching, all of them said that they had positive feelings about technology because they believe that technology and computers can help them get through their students, make the lessons more creative and stimulating.

One student teacher (Esra) commented, "I think that using computers especially in teaching vocabulary is a wonderful way for teachers to keep attention and interest of the students." One student teacher (Ayşe) responded "in my teaching in the future, I will definitively use computers and different technological applications." Student teachers also responded that the electronic portfolio project made them more aware of the resources available for them to use in their teaching. For example, a student teacher (Ahmet) responded "I will definitively use PowerPoint to prepare and present my lessons. It is very useful." Another student teacher (Burcu) responded "I feel more comfortable now using technology and the Internet to aim at improving my class plans and projects."

For the question "Do you feel prepared to teach with technology?" except one student teacher, four of them reported that they felt more comfortable with technology after doing the electronic portfolio project. For example, one student teacher (Didem) said "I feel more confident about using a computer since I did this project." One student teacher (Esra) who said she had positive feelings toward technology mentioned that she did not feel prepared to teach with technology at the moment. She said she needed more training to be more confident with technology.

The student teachers were then asked, "Do you plan to teach with technology?" All of the student teachers answered in a positive way. They said that they believed technology and computers could help to enhance learning and that through technology was an important tool in teaching. However, they were unsure about the methodology, which was in line with the lower score on the post-test in integrating technology into teaching. They are more aware of the resources but more critical at the methodology and their competency. Their responses suggested that by doing the project, student teachers' confidence to use computers and its usefulness in their own teaching increased towards a positive way.

Student Teachers' Attitudes towards Computer Technology Use

The items in the attitude questionnaire (total 95 items) aimed to investigate student teachers' attitudes towards computer use in general with different focus on several aspects, e.g. Interest, Comfort, Accommodation, Interaction (Electronic mail), Concern, Utility, Perception, Absorption, and Significance. In order to determine whether there was a change in student teachers' attitudes towards technology before and after the

electronic portfolio development, the pre- and post-test

scores were compared with a 2-related sample t-test.

Table 6 *Means and Standard Deviations at Pre-test and Post-test*

		Pre-test		Post-test		
		Mean	SD	mean	SD	p
scales						
	Overall attitude	243.80	41.95	276.60	24.50	.035*
subscales						
	Interest	41.80	7.15	36	8.06	.042*
	Comfort	29.20	8.49	38.80	8.32	.040*
	Accommodation	39.80	5.58	42.40	3.64	.18
	Interaction	40.20	6.53	41.5	4.65	.15
	Concern	30.2	2.91	29.40	5.72	.16
	Utility	33.4	6.97	43.20	3.11	.07*
	Perception	41.54	5.76	43.32	4.21	.21
	Absorption	34.80	11.38	37.20	9.60	2.73
	Significance	39.8	6.44	42.80	3.42	.41

p<.05

Table 6 shows that there was a significant change

between pre- and post-questionnaires (Z= .042, p<.05)

indicating that the participants had a considerably

positive attitude toward computers and technology at the

end of the electronic portfolio project. A possible reason for their positive attitude toward computers may be the fact that having completed an electronic portfolio made them feels more excited and satisfied in using computers and technology in the future. In addition, they worked harder to finish their electronic portfolios, and they spent more time on the computer than they usually did. Ropp (1999) study also reported that computer access and computer usage influenced the attitude positively toward computers.

Three sub-scale scores changed significantly from pre-questionnaire to post questionnaire. The mean value for the Comfort and the Utility increased while the Interest became less positive. It appears that although teachers felt more comfortable using computers by the end of the school year, they were less interested at the end of the year compared to the beginning. This result might reveal another factor that might affect students' reactions to computers after completing the project. The tasks and the assignments in the electronic portfolio might be difficult, and hence, might cause students' negative reactions to computers. On the other hand, student teachers believed that computers were useful in instruction since the utility sub-score increased significantly in the post-test. These

findings may be interpreted to mean that the student teachers were sure about using them for teaching. They believed that computers were useful for productivity and instruction.

In order to crosscheck the finding as to whether preparing an electronic portfolio caused any attitude differences, a 2-independent samples Mann-Whitney-U-test was calculated to compare the distribution of responses by the two groups i.e., one group who prepared electronic portfolio vs. the other group who did not prepare electronic portfolio. Although no significant difference was observed (Z=1.56; p<.05) between electronic and non-electronic group in the overall attitude toward computers, an examination of the subscales indicated differences between the two groups.

Table 7 *Mann-Whitney-U-test results for overall attitude*
and sub-scale scores between two groups

scale		mean	p
overall attitude			
	electronic	5.4	.15
	non-electronic	4.2	
sub-scales			
interest			
	electronic	5.6	.16
	non-electronic	4.1	
comfort			
	electronic	6.4	.42
	non-electronic	4.6	
accommodation			
	electronic	7.6*	.03
	non-electronic	3.4	
interaction			
	electronic	5.2	.23
	non-electronic	4.9	
concern			
	electronic	3.3	.01
	non-electronic	7.7*	
utility			
	electronic	7.1*	.03
	non-electronic	4.2	
perception			
	electronic	4.6	.31
	non-electronic	5.3	
absorption			
	electronic	5.2	.84
	non-electronic	5.8	
significance			
	electronic	4.9	.54
	non-electronic	5.3	

$p<.05$

The null hypotheses of no difference between the nine
subscales for two groups were rejected on the subscales of
accommodation, concern and utility. The significant
difference in the utility score suggested that student

teachers who prepared electronic portfolio strongly believed that computers were useful for productivity and instruction. This indicated that after preparing the electronic portfolio, their attitudes towards the facilitation of computers in education increased. That is, they had more positive belief that computers contributed to learning, education, and human life. When they finished the electronic portfolio, they saw the great convenience that computers brought to learning, and this strengthened their belief that computers could contribute to the learning.

In addition, the difference in the accommodation score suggested that they had a better attitude toward learning how to use computers in education than the non-electronic group. During the time when they prepared their electronic portfolios, the electronic portfolio group had to use computers to do their projects. This indicated that they spent more time using computers. Therefore, they understood the great convenience and facilitation that computers provide, so that they would make effective use of computers to do their work in their daily life. It is clear that student teachers in this study expressed positive feeling in the use of computer technology. Despite the fact that they were facing problems with

computers, they were generally willing to give a try. This finding is consistent with findings in most of other studies on teachers' attitudes on the use of computers. For instance according to Woodrow (1991), the success of any new educational program on computer technology depends largely upon the support and attitudes of teachers involved. Many researchers found that teachers are likely to resist not only attempts but also suggestions for computer introduction if they perceived computer technology negatively. Loyd and Gressard (1986) also showed that positive attitudes toward computers were positively correlated with teachers' extent of experience with computer technology. With familiarity, anxieties and fears tended to decrease and confidence increased. The amount of confidence teachers possessed in using computers greatly influenced their effective utilization of technology in the classroom. Positive teacher attitudes toward computers have been widely recognized as a necessary condition for effective use of information technology in the classroom (Woodrow, 1992).

On the other hand, the concern score was higher in the non-electronic group. They were more concerned on the notion that computers would have a negative impact on society in the long run. Student teachers expressed many

concerns related to the use of computers. Among the
concerns reported in this study were lack of software, lack
of time and lack of training on the use of computers. For
time-related concerns, the student teachers reported that
they had to teach other subjects and carry out other
responsibilities, so they would not have enough time to
prepare lessons and handouts for computer usage. They
probably needed more time, especially when preparing
lessons that were related to the use of computers, because
teaching with computers was a new field to them. For
software-related concerns, they reported that the software
provided for them to teach in the high school would be
either too sophisticated or too simple for their students.
For classroom- management concerns, the student teachers
said that it would be quite difficult to maintain
discipline while in the computer laboratory. As supported
by Sheingold (1990) and Plomp and Carleer (1987), teachers
were the primary users of computers with students, and
these student teachers expressed their concerns about the
use of computers that can enhance their teaching and
students' learning. This entire finding also explains why
there was a lower score on the post-test for integrating
technology into teaching. It shows that the student

teachers were more aware of the issues involved in using different technological applications in their teaching.

Summary of Part 3

The results showed that the student teachers' overall technology competency significantly improved during the academic year of 2002-2003. This was expected because there was a lot of emphasis on improving student teachers' technology skills by making them prepare an electronic portfolio. They were required to do activities, which involved the use of technology. In addition, the student teachers were generally positive about computer technology use in language instruction and they were willing to integrate computer technology resources in their teaching. Yet, they need to be more informed about technology resources and receive further training to consider computer technology integration.

The findings also suggested that preparing an electronic portfolio has been useful for developing positive attitudes towards computer technology. Such an attitude may result from confidence in teachers in being knowledgeable about computer technology and about ways of integrating it into language instruction.

CHAPTER 5. CONCLUSION, RECOMMENDATIONS AND LIMITATIONS

General Conclusions

The purpose of this case study was to describe the impact of portfolio preparation on the professional development of EFL student teachers in terms of reflective thinking, technology competency and attitude towards technology use in education. Narratives from student teachers' interviews and analysis of portfolio artifacts provided insight into the process of portfolio preparation. The student teachers stated that the portfolio allowed them to be reflective, which helped them think about their strengths and weaknesses in becoming a teacher. The student teachers also felt that during the preparation of portfolios they were able to identify ways to improve their teaching. The results, overall, showed that the process of preparing a portfolio provided a useful approach to enhancing professional development, with a few negative comments regarding the time involved in doing especially the electronic portfolio, positive comments regarding the support and collaboration from the peers, its contribution to their professional development in terms of reflective thinking and self-confidence. The findings can be summarized as follows:

Writing personal narratives and evaluations, and collaboration with peers stimulates reflective thinking.

The use of portfolios in teacher education programs should be developed as a way to help student teachers begin to understand and articulate what they are learning in theory with what happens in practice. The present study and the literature suggested that the use of portfolios as a reflection tool facilitated student teachers' understanding of the teaching and learning process, and supported Dewey's (1933) idea that reflective thinking can be influenced by structured activities such as writing reflective narratives, journals and evaluations. For instance, in interview transcripts, the opportunity for reflection was mentioned as one of the main benefits of portfolio preparation. All student teachers addressed this benefit both in their written reflections and in their interview responses. They stated that the process of putting together the portfolios helped them to be critical in their teaching practice, to think their strengths and limitations as developing teachers. This reflective process gave them a greater awareness of who they are and why they want to be a teacher because they began to examine their beliefs and their reasons for becoming teachers.

Student teachers' reflective papers also provided evidence of reflective thinking. In preparing the artifacts for their portfolios, the student teachers were engaged in close examination of what was being done in the classroom and to put those thoughts on paper. This reflective process encouraged them to look for strengths and weaknesses and thus try to improve those areas. Therefore, these activities also promoted professional development by requiring the student teachers provide clearly written statements and reflections about their beliefs and practices.

The data of the present study also supported the view of reflection as a hierarchical developmental process termed by Hatton and Smith (1995), since the participants primarily engaged in descriptive reflection in their 1st portfolios, then engaged in critical reflection in their 2nd portfolios.

Collaboration is an important component of reflection. When they share, they have an opportunity to clarify and explicitly state their own personal theories on teaching and learning. Furthermore, this collaboration causes a discussion among the portfolio creators. Collaboration may occur in the form of peer or teacher feedback. It is a

means for students or teachers to communicate what they
know and what they have learned, and allows the
participants an opportunity to address inconsistencies in
their thinking, examine their practices, and identify new
strategies. Participants were encouraged to share and help
each other throughout the portfolio preparation process.
Each participant indicated that the feedback and support
from their peers was helpful in self-examination. It also
helped the participants organized and expressed their
thoughts.

As illustrated in the literature (e.g., Milman, 1999,
Morris & Buckland, 2000, Zembal-Saul, 2001), portfolios can
make a powerful tool for supporting learning to teach.
This is based on the potential of portfolios to engage
student teachers in meaningful reflection, which influences
their ideas about learning and teaching. If a central
objective of the portfolio process is to make teachers
reflective of their own learning, "to recognize that
learning is a lifelong process, then that learning is
beginning to accrue to their students as well "(Lyons,
1998b, p. 253). As Wolf (1998) argued, "Creating a
portfolio culture for students and teachers demands new
skills, new visions of being a professional, and the
commitment of each school community to its students and

teachers—it is a necessary challenge holding great possibilities" (p. 50).

Preparing an electronic portfolio increased technology competency and positive attitude toward technology.

This study suggested that electronic portfolios were more likely than traditional ones to be suitable for representing and communicating teachers' knowledge: the electronic tool gives them the capability to combine different technological tools in one document and to communicate ideas to a wide audience via the Internet if it is possible. These capacities may allow student teachers to understand their knowledge and share it easily.

A second conclusion from this study is that having the appropriate support with reference to facilities, hardware, and software to work on their electronic portfolio was needed and important for developing their portfolios.

The final conclusion is that having student teachers participating in the electronic portfolio preparation process provided opportunities for the student teachers to develop their computer competency and to increase their attitude positively towards computers. All participants reported that their computer skills improved or enhanced as a result of participating in this project. Using

technology to develop electronic portfolios allowed student teachers to gain knowledge of computers and technical skills with various types of hardware and software.

In sum, portfolios have been shown to be an effective tool to enhance reflective thinking of preservice teachers because it puts the responsibility of learning on preservice teachers and encourages them to reflect on their teaching by linking theory they have learned in the classroom to actual classroom practice (Brown & Irby, 1997; Freeman, 1998; Zidon, 1996). However, the majority of literature reviewed shows that most portfolios being developed by preservice teachers are traditional, three-ring binder "scrapbooks," not electronic in format. With the use of technology to create electronic portfolios, teacher education programs both incorporate technology into their curriculum and provide opportunities for the preservice teachers to enhance professional development by encouraging teachers to be reflective about their practice (Barrett, 2000; McKinney, 1998; Yagelski, 1997).

Recommendations

Research in the field of both traditional and electronic portfolios for foreign language teacher education was non-existent when the researcher began this study. Based on the findings of this study and the experiences gained in the data collection and analysis process, the researcher offers the following recommendations for language teacher education.

While developing their portfolios, student teachers had on-going, in-depth reflective thinking about their experiences. As a result of the nature of the process, student teachers need to begin their portfolios immediately, and not wait until the last minute. They also need to get support from faculty and their peers as well as be supportive to others throughout the process.

One conclusion from this study is that if student teachers are going to develop an electronic portfolio well it will require a large amount of time on the part of the participants - from getting familiar with the technology. Therefore, the student teachers must receive adequate technology training throughout their program in order to be able to create such a technological portfolio.

As discussed before, portfolios, those done in traditional as well as electronic media, are structures for critical examination of practice and could be vehicles for professional growth. If portfolios are going to function in this way, however, they need to be a part of continuing professional development, not a one-shot project done during teacher education and then put away. Student teachers need to develop and use their portfolios throughout their teaching career.

The present study also has some implications for teacher education faculty. If teacher educators hope for future teachers to have a voice, construct their own knowledge of teaching, and incorporate reflection into their daily teaching practices, then they must provide opportunities in the programs and model such practices in their own teaching. The findings and insights from the present study suggested several implications for guiding student teachers in developing reflective thinking. The positive use of the portfolios as a tool to guide their reflective analysis of teaching beyond a technical focus may imply that if teacher educators value the ability for preservice teachers to reflect on multiple perspectives of teaching, then perhaps such opportunities should be evident throughout the program, and especially during practice

teaching. In other words, faculty members must be familiar with all aspects of the process – from planning the process to teaching student teachers about reflection. Great amount of time must be committed to instruction on the reflective process.

For the electronic portfolio to be an effective tool also, it must be a program effort. They also must be trained about the technology to create such a technological portfolio. They should provide consistency with the types of hardware and software that will be used to develop the electronic portfolio, and provide a way to teacher candidates to be able to store their electronic portfolios. For the electronic portfolio, teacher education programs need to provide adequate facilities with the appropriate hardware and software as well as operational hours for teacher candidates to work on their electronic portfolios.

It is recommended that future research continue to be conducted regarding the use of both traditional and electronic portfolios in foreign language teacher education programs, particularly research that involves a longitudinal focus. For instance, the researcher suggests conducting this same study in a foreign language teacher education program over four years following the teacher

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candidates from their first semester through their graduation in order to document student growth. A content analysis of each year portfolio would provide such information.

Furthermore, as this inquiry was the result of one researcher in one year attempting to broaden student teachers' reflective analysis beyond technical skills, it would seem worthy to investigate efforts across an entire teacher education program to promote such thinking. Although all five participants in this study reflected on different aspects of teaching and learning, there were differences in what each person reflected upon as meaningful for her/his professional development. Therefore, future case studies that investigate the reflective abilities, specific aspects of the student teacher reflection, and influential factors such as background experiences, beliefs, and values, might provide helpful insights for understanding their reflective processes.

A longitudinal study may provide meaningful information on whether the habit of reflection initiated during pre-service experiences is continued once the teacher candidate starts to teach in real classrooms.

The participants said that their portfolios both
traditional and electronic would be an advantage for job
search. But, how effective are they in gaining access to
the job market? Therefore, a follow-up study could be done
with the same participants.

One concern for future research is to enlarge the
study of portfolio preparation to include the perspectives
of the faculty. How effective is the portfolio in
assessing the students for particular courses? What kinds
of grading rubrics can be established for the evaluation of
the portfolios? Such questions must be answered.

Limitations

As with all research methodologies, the case study
method has certain strengths and limitations. In a case
study, the research is done to provide information about a
specific population; this case study is aimed at providing
information about how particular teacher candidates
performed in a specific context. The research did not
attempt to generalize a population of all EFL student
teachers nor did it attempt to predict their future
behavior. Five senior year student teachers' perspectives
were reported on this study, and they were actually
preoccupied with the prospect of graduation and getting

jobs. Therefore, these portfolio constructors would not be representative of the present language teacher education majors because they were at the conclusion of their teacher education. They were not facing the same decisions or dilemmas as students just beginning or continuing in their education. Their perspective would be significantly different to that of incoming freshman or student in their midst of the teacher education program. Because of these differences, this study is limited to portfolio preparation by five senior student teachers.

Additionally, this study was not intended to thoroughly examine all areas of teacher knowledge, but rather, only the reflective thinking component of professional development. Furthermore, the enormous amount of data contained in the portfolios required that the research and data analysis process be clearly organized, consistent, and continuous. And as is the case with all research, issues of validity, reliability and ethics were also of concern when using the case study method (Merriam, 1988).

APPENDICES

APPENDIX A: Consent Form

You are invited to participate in a research study of technology integration into Department of Foreign Language Teacher Education program. My name is Zeynep Koçoğlu. I am a graduate student at this department, and this research is being conducted in partial fulfillment of the requirements for a doctoral dissertation. I hope to learn what you think and believe (1) about technology integration into curriculum, and (2) use of portfolios as a tool for teacher learning. You were selected as a possible participant in this study randomly. You will be one of 10 participants in the study. You will be asked to participate in two interviews, and your teaching portfolio will be analyzed for the purposes of the study. In addition to interviews, the electronic journals that you wrote for FLED 403 and FLED 416 will be analyzed to provide an additional source of information about your experiences with technology. Any information that is obtained in connection with this study and that could be identified with you will remain confidential. You will be identified only by a pseudonym. All data, including audio tapes of the interviews, the verbatim transcriptions of the interviews, portfolios and electronic journals will be identified by your pseudonym. No names of cities, towns or

schools will be mentioned in the research report. If you

have any questions, please contact me via electronic mail

at zeynepkocoglu@hotmail.com. Thank you for your

contribution to this inquiry. I sincerely appreciate your

support and assistance. Your signature indicates that you

have read the information provided above.

Participant name   Participant signature

_____   _____

Researcher name   Researcher signature

_____   _____

Technology Proficiency Self-Assessment[2]

ID: _____	Use the ID assigned to you.
Group: _____	

Course: _____   Section: _____

Instructor: _____

Gender: ①Male ②Female   Age: ____

Do you have a computer at home? ① No   ②Yes

Do you have access to the World Wide Web at home? ①No ②Yes

Instructions: Select one level of agreement for each statement to indicate how you feel.
SD = Strongly Disagree, D = Disagree, U = Undecided, A = Agree, SA = Strongly Agree

I feel confident that I could...	SD	D	U	A	SA
1. send e-mail to a friend.	①	②	③	④	⑤
2. subscribe to a discussion list.	①	②	③	④	⑤
3. create a "nickname" or an "alias" to send e-mail to several people at once.	①	②	③	④	⑤
4. send a document as an attachment to an e-mail message.	①	②	③	④	⑤
5. keep copies of outgoing messages that I send to others.	①	②	③	④	⑤
6. use an Internet search engine (e.g., Info seek or Alta Vista) to find Web pages related to my subject matter interests.	①	②	③	④	⑤

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[2] TPSA created by and used with permission of Dr. Margaret Merlyn Ropp, Assistant Professor of Technology Education, University of New Mexico. For additional information or for permission to use the TPSA in other studies, see http://www.unm.edu/~megropp/ TPSA v 1.0

		①	②	③	④	⑤
7.	search for and find the Smithsonian Institution Web site.	①	②	③	④	⑤
8.	create my own World Wide Web home page.	①	②	③	④	⑤
9.	keep track of Web sites I have visited so that I can return to them later. (An example is using bookmarks.)	①	②	③	④	⑤
10.	find primary sources of information on the Internet that I can use in my teaching.	①	②	③	④	⑤
11.	use a spreadsheet to create a pie chart of the proportions of the different colors of M&Ms in a bag.	①	②	③	④	⑤
12.	create a newsletter with graphics and text in 3 columns.	①	②	③	④	⑤
13.	save documents in formats so that others can read them if they have different word processing programs (e.g., saving Word, ClarisWorks, RTF, or text).	①	②	③	④	⑤
14.	use the computer to create a slideshow presentation.	①	②	③	④	⑤
15.	create a database of information about important authors in a subject matter field.	①	②	③	④	⑤
16.	write an essay describing how I would use technology in my classroom.	①	②	③	④	⑤
17.	create a lesson or unit that incorporates subject matter software as an integral part.	①	②	③	④	⑤
18.	use technology to collaborate with other interns, teachers, or students who are distant from my classroom.	①	②	③	④	⑤
19.	describe 5 software programs that I would use in my teaching.	①	②	③	④	⑤
20.	write a plan with a budget to buy technology for my classroom.	①	②	③	④	⑤

Thank you for your time.

Teachers' Attitudes Toward Computers

This questionnaire is derived from well-validated portions of several attitudinal surveys that have been used with teachers in the past. We will use your responses to help develop a profile of how teachers view technology. Please complete all items even if you feel that some are redundant. This should require about 10 minutes of your time. Usually it is best to respond with your first impression, without giving a question much thought. Your answers will remain confidential.

ID: _____	Use the ID assigned to you

Part 1
Instructions: Select one level of agreement for each statement to indicate how you feel.
SD = Strongly Disagree, D = Disagree, U = Undecided, A = Agree, SA = Strongly Agree

	SD	D	U	A	SA
1. I think that working with computers would be enjoyable and stimulating.	①	②	③	④	⑤
2. I want to learn a lot about computers.	①	②	③	④	⑤
3. The challenge of learning about computers is exciting.	①	②	③	④	⑤
4. I like learning on a computer.	①	②	③	④	⑤
5. I can learn many things when I use a computer.	①	②	③	④	⑤

Part 2
Instructions: Select one level of agreement for each statement to indicate how you feel.
SD = Strongly Disagree, D = Disagree, U = Undecided, A = Agree, SA = Strongly Agree

		SD	D	U	A	SA
1.	I get a sinking feeling when I think of trying to use a computer.	①	②	③	④	⑤
2.	Working with a computer makes me feel tense and uncomfortable.	①	②	③	④	⑤
3.	Working with a computer makes me nervous	①	②	③	④	⑤
4.	Computers intimidate me.	①	②	③	④	⑤
5.	Using a computer is very frustrating.	①	②	③	④	⑤

Part 3
Instructions: Select one level of agreement for each statement to indicate how you feel.
SD = Strongly Disagree, D = Disagree, U = Undecided, A = Agree, SA = Strongly Agree

		SD	D	U	A	SA
1.	If I had a computer at my disposal, I would try to get rid of it	①	②	③	④	⑤
2.	Studying about computers is a waste of time.	①	②	③	④	⑤
3.	I can't think of any way that I will use computers in my career	①	②	③	④	⑤
4.	I will probably never learn to use a computer)	①	②	③	④	⑤
5.	I see the computer as something I will rarely use in my daily life	①	②	③	④	⑤

Part 4
Instructions: Select one level of agreement for each statement to indicate how you feel.
SD = Strongly Disagree, D = Disagree, U = Undecided, A = Agree, SA = Strongly Agree

		SD	D	U	A	SA
1.	The use of Electronic mail (E-mail) makes the student feel more involved.	①	②	③	④	⑤
2.	The use of E-mail helps provide a better learning experience.	①	②	③	④	⑤
3.	The use of E-mail makes a class more interesting	①	②	③	④	⑤
4.	The use of E-mail helps the student learn more	①	②	③	④	⑤
5.	The use of E-mail increases motivation for class	①	②	③	④	⑤

Part 5
Instructions: Select one level of agreement for each statement to indicate how you feel.
SD = Strongly Disagree, D = Disagree, U = Undecided, A = Agree, SA = Strongly Agree

		SD	D	U	A	SA
1.	Computers are changing the world too rapidly.	①	②	③	④	⑤
2.	I am afraid that if I begin to use computers I will become dependent upon them.	①	②	③	④	⑤
3.	Computers dehumanize society by treating everyone as a number.	①	②	③	④	⑤
4.	Our country relies too much on computers.	①	②	③	④	⑤
5.	Computers isolate people by inhibiting normal social interactions among users.	①	②	③	④	⑤
6.	Use of computers in education almost always reduces the personal treatment of students.	①	②	③	④	⑤
7.	Computers have the potential to control our lives.	①	②	③	④	⑤
8.	Working with computers makes me feel isolated from other people.	①	②	③	④	⑤

Part 6
Instructions: Select one level of agreement for each statement to indicate how you feel.
SD = Strongly Disagree, D = Disagree, U = Undecided, A = Agree, SA = Strongly Agree

	SD	D	U	A	SA
1. Computers could increase my productivity.	①	②	③	④	⑤
2. Computers can help me learn.	①	②	③	④	⑤
3. Computers are necessary tools in both educational and work settings.	①	②	③	④	⑤
4. Computers can be useful instructional aids in almost all subject areas.	①	②	③	④	⑤
5. Computers improve the overall quality of life.	①	②	③	④	⑤
6. If there was a computer in my classroom it would help me to be a better teacher.	①	②	③	④	⑤
7. Computers could enhance remedial instruction.	①	②	③	④	⑤
8. Computers will improve education.	①	②	③	④	⑤

Part 7
Instructions: Choose one location between each adjective pair to indicate how you feel about computers.

Computers are:

1.	unpleasant	①	②	③	④	⑤	pleasant
2.	suffocating	①	②	③	④	⑤	fresh
3.	dull	①	②	③	④	⑤	exciting
4.	unlikable	①	②	③	④	⑤	likeable
5.	uncomfortable	①	②	③	④	⑤	comfortable

Part 8
Instructions: Select one level of agreement for each statement to
indicate how you feel.
SD = Strongly Disagree, D = Disagree, U = Undecided, A = Agree,
SA = Strongly Agree

	SD	D	U	A	SA
1. I like to talk to others about computers.	①	②	③	④	⑤
2. It is fun to figure out how computers work.	①	②	③	④	⑤
3. If a problem is left unsolved in a computer class, I continue to think about it afterward.	①	②	③	④	⑤
4. I like reading about computers.	①	②	③	④	⑤
5. The challenge of solving problems with computers does not appeal to me.	①	②	③	④	⑤
6. When there is a problem with a computer that I can't immediately solve, I stick with it until I have the answer.	①	②	③	④	⑤

Part 9
Instructions: Select one level of agreement for each statement to
indicate how you feel.
SD = Strongly Disagree, D = Disagree, U = Undecided, A = Agree,
SA = Strongly Agree

	SD	D	U	A	SA
1. It is important for students to learn about computers in order to be informed citizens.	①	②	③	④	⑤
2. All students should have an opportunity to learn about computers at school.	①	②	③	④	⑤
3. Students should understand the role computers play in society.	①	②	③	④	⑤
4. Having computer skills helps one get better jobs.	①	②	③	④	⑤
5. Computers could stimulate creativity in students.	①	②	③	④	⑤

Thank you for your time.

APPENDIX D: Interview Questions

PRE-INTERVIEW QUESTIONS

1.   What is a portfolio? What is its purpose?

2.   What role do you see the portfolio playing in your life as a student teacher?

3.   Do you think you will develop any new skills as a result of portfolio preparation?

4.   What kinds of support do you feel you will need in order to complete the portfolio?

5.   What would be the problems/difficulties you will have in preparing your portfolio?

6.   Do you think preparing portfolio facilitate your professional development? How?

7.   Do you think preparing portfolio will make you more reflective than before? How?

8.   Think about the electronic portfolio you will prepare. What would be the advantages/disadvantages of preparing electronic portfolio over pen/paper portfolio?

9.   Do you think you will have problems while preparing the electronic portfolio? What kind of problems?

10. Do you think preparing electronic portfolio would enhance your technology competency?

11. Will you use your pen/paper portfolio and electronic portfolio in the future?

12. Any other comments you would like to add about both portfolios.

13. How do you feel about teaching with computers and different technological applications?

14. Do you feel prepared to teach with technology?

15. Do you plan to teach with technology?

POST-INTERVIEW QUESTIONS

1.   Think about your completed portfolio now. Can you describe it for me?

2.   Do you think you will develop any new skills as a result of portfolio preparation?

3.   What kinds of support do you feel you will need in order to complete the portfolio?

4.   What would be the problems/difficulties you will have in preparing your portfolio?

5.   Do you think preparing portfolio facilitate your professional development? How?

6.   Do you think preparing portfolio will make you more reflective than before? How?

7.   Will you use your portfolio in the future?

8.   Tell me what you are most proud of in your portfolio.

9.   If you could change something about your portfolio, what would it be?

10. If you were to give advice to a student just beginning to the program in which he/she was to prepare a portfolio, what would it be?

11. Think about your electronic portfolio now. What were the advantages/disadvantages of preparing electronic portfolio over pen/paper portfolio?

12. Do you think you had problems while preparing the electronic portfolio? What kind of problems?

13. Will you use your pen/paper portfolio and electronic portfolio in the future?

14. Any other comments you would like to add about both portfolios.

15. How do you feel about teaching with computers and different technological applications?

16. Do you feel prepared to teach with technology?

17. Do you plan to teach with technology?

APPENDIX E: Description of Classroom Observation Tasks

TASK 1: the learning environment

If you were asked to describe the sort of learning environment characteristic of the classrooms where you teach, what would you say? Can you identify any conscious strategies you use to generate this environment?

TASK 2: managing error

What experience do you have of being corrected when speaking a foreign or second language? Do you think this has influenced your teaching?

Much of what a teacher says and does in the classroom is a reflection of that teacher's belief about how people learn languages. Considering your own style of managing error, how does this reflect your underlying beliefs?

TASK 3: giving instructions

Have you become more aware of the process of instruction giving? If so, what specific aspect of the before/during/after the lesson activities in which you were involved helped you towards a better awareness? Does this reveal anything to you about your own learning style?

APPENDIX F: Samples for Tasks

A SAMPLE OF TASK 1 ON LEARNING ENVIRONMENT

> *"The critical factor is not class size, but rather the nature of teaching as it affects learning."*
>
> C. B. Neblette

> "To get something, you have to give something. What do you have to give? Your heart, mind, and soul." Jeremy Ruesing

Learning environment is a place where students and teachers live. It includes natural world of physical and affective factors, which affect students' learning and teachers' teaching.[2]

In one of our FLED 403 classes, we emphasized that the teacher's smiling, use of voice, gestures, postures, mimics, warning style, and relations with students are all contributing factors to the learning environment. We also discussed that peer behavior is also important in the learning environment. In the light of these remarks, in this task I will talk about these factors.

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[2] Here, I will mostly talk about affective domain of learning environment, which is mainly teacher and student behavior, since I have mentioned the physical domain of it in the classroom setting in the 3rd task.

<u>5A:</u>

In this lesson, she checked the students' weekend homework, collected their writing homework, which were prepared on colorful cartoons☺, as she normally does. She always does the same things in the lessons I have observed. I have talked about these routines, since the type and variety of activities directly affect the students' attitude toward the lesson, which affects the learning environment in turn.

As I said in the fifth task, which is "Attending to the Learner", the teacher of those young learners do not seem to be interested in the importance of learning environment. I think so, because she rarely smiles. As we know, no matter what the conditions are, a teacher has to create such an environment that will awaken the "brains" to be motivated for learning. So, a teacher shouldn't wear his/her problems on his/her face, no matter the situation. She/he should always be cheerful since smiling can brighten students' day.

She generally wonders around or stands at the front of the class looking at the students with an angry face. She never uses her gestures to praise the students. Using gestures, postures, and mimics to give some signals such as

"You are a good student." , "Please! What you are doing causes me and your friends to feel interrupted." is effective to let the students know what the teacher is thinking and feeling at those times. When a student is off-task, she calls her/his name to warn him/her. But, this works only for a short time. For this reason, she can use other warning styles such as eye contact, giving I-messages, sometimes (!) ignoring, sometimes (!) giving the student a responsibility such as cleaning the board, distributing worksheet, and the like.   ..

A SAMPLE OF TASK 2 ON MANAGING ERRORS

WHAT IF I MAKE AN ERROR?

I always say: "Instead of learning something wrongly, it is better not to learn it, since it is more difficult to correct something than learning it from the beginning". For that reason, I am not opposed to correcting students' errors in the classroom. However, this does not mean that I will interrupt the students every time when s/he makes an error. Certain errors may require immediate attention for students not to learn it in the wrong way whereas other errors may be treated in another way or at another time. I have come up with such kind of errors during my observations.

First of all, I want to mention the difference between "error" and "mistake" in my own words. When a student makes a mistake s/he does it because of not being careful or because of not paying enough attention, but not because of lack of knowledge. On the other hand, "errors" stem from knowing something in the wrong way or not knowing it at all.

In my opinion errors require correction, but its immediacy depends on the situation whereas mistakes do not require attention each time. Interrupting students constantly may

decrease students' eagerness to participate in the lesson and take risks. The best way to correct errors is making students aware of the errors they make at the end of the lesson by writing the general mistakes on the board or telling them without specifying who did which mistake. My teacher ……….. at prep class at Boğaziçi University exemplifies my point best. She never interrupted us when we are speaking but she always told our mistakes at the end of our speech which I appreciated very much. When correcting our writing assignments, she never pointed out the same mistakes again and again, instead she wrote small notes that include its right version. For example I used to say "themselves" instead of "themselves" although there is not such a word in English. She never corrected that error more than once in my papers and wrote the right version of it for me. Another point I appreciated about my teacher was that she took notes about the common errors we did and then announced them in class and warned us try not to do them again.

A for the teachers I have observed this semester my prep class teacher –…….-, at Robert Collage, has a certain strategy to deal with the errors. She never interrupts the student when s/he is speaking but she never ignores the errors. She tells the mistake when the student stops

speaking in a positive and constructive way, without upsetting or confusing the students. On the other hand, she ignores the small mistakes such as the omission of "-s" in present tense verbs, since she is certain about the students that they know where to use it and their mistake stems from not being careful. When an error is repeated frequently, she writes it on the board, then she writes the right version it underneath. When she seeks certain and specific errors she asks implying questions as in the following dialogue: (It is a real dialog from one of English Club hours when she was teaching past continuous tense)

T: ….., what were you doing at 10:30 this morning?

S: I was learning grammar at 10:30 this morning.

T: Were you really learning grammar this morning? Think about it carefully once more. (She says with a cheerful and lovely face)

The student thinks about it for a moment and realizes that she was dancing at the party at that time and replies:

S: No, not really. I was dancing at the party at that time this morning.

…….. has also found the mistakes about the placement of relative pronouns and frequency adverbs important. She

wrote the common errors about them on the board and warned students not to do them again.

……… does not react negatively to the wrong answers, therefore the students do not hesitate to tell their thoughts. She encourages students by telling "Think whatever you think, it may be right or wrong. All human beings can make mistakes, it is quite natural". The students sometimes kid each other when they make mistakes, but the teacher allows only lovely jokes to prevent any offence.

As for my teacher- ……..-in Cent Collage, I observed her only 4 hours and did not get a certain idea about her error correction strategy, but as far as I could see, she constantly and immediately corrects her students' mistakes but she does it in such a way that she does not distract the students' concentration and does not cause offense. However, her students do not seem very eager and confident to speak.

Keeping balance between paying attentions to the students' errors and ignoring them is very important to encourage students' participation, which is very important in EFL classes.

A SAMPLE OF TASK 3 ON GIVING INSTRUCTIONS

WHAT WILL WE DO NOW?

Giving clear an timely instructions is essential for the effective organization of the activities and also students in EFL classes. Having a chance to compare the instruction giving strategies of three different teachers, I have recognized that a lesson may go on very smoothly or turn into a chaos because of the instructions given. I will clarify my ideas by narrating two specific lessons from two teachers and the general style of the other teacher.

In my ninth grade non-fiction class in Robert College, the students were supposed to evaluate each others' "Process writing assignments". The teacher -….- firstly drew the attention to of the students to the to the lesson and asked the class to get into groups of 3 or 4, then he explained: "now you'll evaluate one of your friends' paper according to the criteria I'll give you. No one will evaluate his/her own paper. If I give you your own paper, turn it back to me and I'll give another one. I want you to criticize each other constructively. You are supposed to complete this in this hour-he informs the students about how much time they have. Then he delivered the papers and the criteria which also had a clear instruction on it.

When the students were working on the papers,(they are seated in groups but they work individually. The group arrangement is only for giving help to each other, not for working together) the teacher went around the class to help the students if they needed help. In my opinion, giving instructions before delivering handouts is better, because the students' attention is drawn to the handout and they do not listen to the teacher if the handouts are delivered before giving instruction. My teacher …….. is also careful to inform students about the content of the lesson to have a smooth transition between the topics. For example, when they completed their study on the novel in ninth grade class, he delivered a handout to inform students about what they will do in the following three weeks. By that way, the students will know what they will do, they will get prepared for the next class (for example they will read the poems at home and look up their dictionary for unknown vocabulary) , and they will contribute to the richness of the literature class. In contrast, my teacher ……… Does not inform students about the coming activities which arouses students' curiosity and distracts their attention. In one of her lessons, a student asked: "Oyuna zamanımız kalmıyor öğretmenim, ne zaman oyniycaz?" and she replied: "Doesn't matter we'll play it later!"   Since she did not provided

the student with a clear answer, the student seemed unpleasant.

…….. also prefers to deliver the handouts as soon as she enters the classroom in order to focus the students' attention on it but her instructions are not effective since she can not draw the students' attention to herself. However; when she realizes that the students does not listen to her, she explains what they will do by modeling on the board. For example, when she asks students to put sentences into the correct order, she models on the board as:

a ☐   d ☐

b ☐   e☐

b ☐   f ☐

Modeling is a good technique to show the students the way to follow. It does not leave any questions in students' mind and they do not need to ask their peers for help.

As for my prep class teacher at Robert College (I talk about the English Club for prep classes where they always do grammar exercises), she always gives the same kind of instructions -such as: "match the words with correct

definition, answer the following questions or fill in the blanks with the appropriate phrase etc"- that the students start doing the exercises as soon as they receive them before giving instructions. This may also stem from their doing only grammar exercises and the same kind of exercises. Her instructions about the students' behavior are very formal and effective. For example: "Show respect to your friend when s/he is speaking. If you do otherwise, you will be punished with staying here for one extra hour. I have heard that kind of a warning only once during the semester, but it was very effective.

It is not adequate to give only clear and timely instructions to the students but it is also necessary to give instructions whose language level is appropriate to the students. I had a teacher at prep class at my high school whose language I had never understood. She always used terminological language such as "pronouns, subjunctives, adverbial clauses" at the very beginning of my language learning when I did not know what they are. This caused not to be able to understand what we are doing and a huge stress on my shoulders.

APPENDIX G: A Sample of Cooperating Teacher Evaluation

In her second lesson, at prep class, she started the lesson by hanging pictures of E. T. and Alf on the board and made students talk about those creatures. Since her activities were related to the space and space creatures, it was a good choice of materials and good link to her other activities.

Later she distributed them the short story called "Zoo" to read. They read it in 8-10 minutes. After that, she asked students to study in their groups of 5 or 6 and discuss the comprehension questions she distributed later. It was very effective to make students discuss the questions firstly in their groups. If she had just asked them the questions one by one, only a few students would be able to speak but making them discuss helped them to look at the issue from different angles. Later she answered the questions one by one with them and this helped students to compare their answers, ideas with those of other groups.

After comprehension, she dealt with vocabulary. The vocabulary activity was also very effective. She firstly asked students to match the words taken from the story with their definitions. This activity helped them to understand their meanings but she did not leave this activity like

that. She also asked students to complete the sentences in blanks with those words. After learning their meanings, seeing them in context helped students to understand their usage better.

Lastly, she distributed students six different handouts on which there were caricatures of Earthlings and Kaanians (taken from the story) speaking to each other. She asked students to look at the pictures carefully to understand what was going on there and fill in the speech bubbles with what comes to their minds in their groups. Unfortunately the time did not allow this activity to be completed on the allotted time therefore she stopped. I must admit that it was the best activity. Students liked it much because they enjoyed the illustrations much. There were caricatures of some famous people such as İlhan Mansız talking with the space creatures. It was a good idea to include some people whom the adolescents liked. She knew how to motivate them. They created very enjoyable dialogues. Each group read them one by one later.

Shortly, her activities were very well planned and integrated. However, she had some weaknesses such as timing, some students' talking in their native language but she tried to prevent this by wandering around while

students were dealing with their tasks. She was good at

also engaging almost all the students in the activities and

giving them equal opportunities to talk. She also used

visual aids efficiently.

APPENDIX H: A Sample of Self-Evaluation

The ninth grades were my nightmares since they were too energetic and hyperactive during the lessons I have observed. The class teacher could rarely manage to apply the activities in his class because of the attitudes that students had towards him. Although he was quite an experienced teacher, he could hardly cope with them.

The materials I have chosen were quite appropriate to their program: They had studied 'Romeo and Juliet' in the non-fiction class and provided the students with a poem which was about "forbidden love". It was quite integrated with their previous activities. Since they were teenagers, the topic attracted their attention very much.

I have done the warm-up with a scene from 'Romeo and Juliet' and went on with the poem. I have made the students read each stanza one by and explained them to the students myself. My intention was to make students explain each of them but, since got too many activities, I had no time to do that. It would be great if I had listened to the students' creative comments.

After that, I have asked them to read a legend with the same topic and create a legend of their own for our couple in the poem to come together. They read the legend

with interest and each group created their own legends. I had difficulty in classroom management in the group activity since I did mistake of giving instructions after the groups are constructed and the materials were distributed.

APPENDIX I: A Sample of Peer-Evaluation

When we went to the school, ………. was a bit excited because it was her first official presentation. However she had done a presentation in that class a week before so she knew the students.

When she entered the class, she firstly greeted the students and then asked them if they had heard about Tatilya or they had gone there. She spoke and then passed on to work on the picture in their books. She talked for a while about the picture with students, she asked them questions. I think it was a good start by talking about Tatilya, a place that students knew so they could personalize the question if they went there and it was a good connection to the picture in the book. The picture in the book was a picture of an entertainment center like Tatilya. However I believe that it would have been better if she had given much time to the picture and make almost all the students speak because they like talking and giving their ideas very much.

As the 2nd activity she asked students to do the exercise in their books. They were supposed to match the words with the pictures there. However, the pictures were not very clear. If she had just made them match by looking

at those pictures some students might have difficulties in understanding what the pictures were but she had drawn the same pictures on large colorful flashcards so that it was easier for students to understand the pictures. What she thought was very effective.

APPENDIX J: A Sample of Student Teacher Narrative

After much thought, I have chosen English language education as a major, and teaching as my profession. I have always wanted to be a teacher, ever since I was a little girl. I love the thought of having a class full of children and teach them.

As a I grew in school, I had several elementary teachers who I still keep in touch. These teachers not only taught, but also they had fun doing it. I especially remembered my sports teacher. He helped me to like basketball which I started to play because of him. He was a friend to everyone,, and came up with new and creative ideas that made sport fun.

I want to be someone the children can look up and talk to. I feel that I work well with children, and I would like to help these children in every aspect of their life. I want to really make a difference in a child's life.

APPENDIX K: A Sample of Electronic Journal

LESSON 2

17th of March was the date on which I did my first presentation. The night before the presentation, I was so nervous and anxious that I hardly slept. The next day, I could not decide what to wear for a long time because I felt that I should have looked professional, just like a real teacher. (THIS SHOWS THAT YOU TAKE YOUR JOB SERIOUSLY AND ı AM HAPPY FOR THAT!) I left the dormitory earlier than ever in case I waited for the bus for a long time. My anxiety was increasing as I approached the class but it completely vanished the minute when I received my boyfriend's message wishing me luck and saying that I would succeed (POSITIVE THINKING- WELL DONE TO HIM AS WELL!). When I entered my cooperating teacher's office, she welcomed and encouraged me. Then I went to the class to get prepared and saw that my peer Başak had not arrived yet. I called her and described the class. She helped me to organize my pictures and activities.(FULL COOPERATION APPRECIATED, YES!) When we were doing that, my students (in fact they are like my friends) (IT WOULD BE NICE IF TEACHERS SAW THEIR STUDENTS AS THEIR FRIENDS SOMETIMES-

THINK ABOUT IT) relieved me by helping and encouraging..
they organized the desks and chairs in the way I wanted.

When my cooperating teacher arrived, she explained the
situation to the students and left the stage to me. I
started my presentation by sticking a picture on the board
and asking students questions to activate their schemata
about the topic. At the end of that warm-up activity, the
cooperating teacher encouraged me by telling: ' Good
introduction!'. This was a very tactful behavior and
heartened me. (YES, I AGREE!) Since I thought that the
short story and the activities were a bit challenging, I
was worried that they would not work , but my students did
better than I thought. (LOVELY)

They have read the story in a shorter time than I expected
and they dramatized it spontaneously at the board. They
found the activities interesting and enjoyed the lesson.
The funniest thing happened at the end of the lesson. One
of the students shouted: 'Valla better than Mrs. Altunbaş!'
My cooperating teacher teacher also heard it she laughed
too. (THAT IS SO SWEET!!) To confess that this feedback
from students pleased me because it indicates their
pleasantness. (DEFINITELY! YOU HAVE DONE WELL!)

In short, my first lesson was a real joy both for me and for the students and I feel that I will really love my job as always loved my department. (IT'S GREAT TO HEAR THIS!) The students' influence is of course really big on my feelings because they are all brilliant and respectful students and it is hard to find such students in every school. (ALSO TRUE BUT IT'S THE TEACHER'S RESPONSİBİLİTY TO MAKE THE BEST OUT OF THEIR STUDENTS!) THANKS! AND I AM HAPPY TO SEE YOU SO SUCCESSFUL WITH YOUR FIRST ATTEMPT, SEEING MY CONFIDENCE IN YOU PAYS OFF IS VERY REWARDING FOR ME TOO! GOOD LUCK WITH THE REST OF THE TEACHING SESSIONS!

LESSON 3

The day is 24th of March and my cooperative teacher Joan Altınbaş finds the class in such a mass that nobody sits down and nearly half of the students are not present in the class. She gets furious and asks where everybody was. Getting no answer to her question really drives her crazy and she asks them whether they brought their first draft of process writing poor (DO YOU MEAN 'FOR'?) peer response or not.

Which impressed in that occasion is that the students write even their first drafts o computer and they can take the printouts from the computer lab whenever they want. (THIS

IS SOMETHING WHICH YOU WILL NOT BE ABLE TO SEE IN MOST OF THE SCHOOLS IN TURKEY!) The students who prepared the draft but didnot take out the prints went to the lab with the permission of the class teacher. The school provides many such facilities to students which makes them versatile individuals. (YES!)

In the middle of the lesson, I came up with the most embarrassing situation since the beginning of my training period. The students were listening to the stereo since they had a music exam on that day. When the teacher entered the class, they stopped listening to it and I thought that they switched the stereo off but they had not. They had only lowered the volume but I did not notice. Suddenly, an incredibly sizzling noise rose from the stereo as it was going to explode. "Oh my God!" I said to myself. (OH WOW!) It was because of my phone, I had only got the volume off! I immediately picked it up and switched off.

I was really shocked and embarrassed. I apologized from my teacher and from the class for causing such a disturbance. (THESE THINGS HAPPEN.. TECHNOLOGY IS SOMETIMES VERY FRUSTRATING!) Then, they welcomed my apology and went on to do activities.

APPENDIX L: Hatton and Smith Reflectivity Criteria

Criteria for the recognition of evidence for different types of reflective writing (Hatton and Smith, 1995)

Descriptive writing -   Not reflective.

   -      Description of events that occurred/report of literature.

   -      No attempt to provide reasons/justification for events.

Descriptive reflection   -Reflective, not only a description of events but some attempt to provide reason/justification for events or actions but in a reportive or descriptive way. E.g., 'I chose this problem solving activity because I believe that students should be active rather than passive learners'.

   -      Recognition of alternate viewpoints in the research and literature which are reported. e.g., 'Tyler (1949), because of the assumptions on which his approach rests suggests that the curriculum process should begin with objectives. Yinger (1979), on the other hand argues that the 'task' is the starting point.'

   -Two forms:-

   (a) Reflection based generally on one perspective/factor as rationale.

   (b) Reflection is based on the recognition of multiple factors and perspectives.

Dialogic reflection -   Demonstrates a 'stepping back' from the events/actions leading to a different level of mulling about, discourse with self and exploring the experience, events and actions using qualities of judgment and possible alternatives for explaining and hypothesizing.

   -Such reflection is analytical or/and integrative of factors and perspectives and may recognize inconsistencies in attempting to provide rationales and critique, e.g., 'While I had planned to use mainly written text materials I became aware very quickly that a number of students did not respond to these. Thinking about this now there may have been several reasons for this. A number of the students, while reasonably proficient in English, even though they had been NESB learners, may still have lacked some confidence in handling the level of language in the text. Alternatively a number of students may have been visual and tactile learners. In any case I found that I had to employ more concrete activities in my teaching.'

Two forms, as in (a) and (b) above

Critical reflection -   Demonstrates awareness that actions and events are not only located in, and explicable by, reference to multiple perspectives but are located in, and influenced by, multiple historical and socio-political contexts. e.g., 'What must be recognized, however, is that the issues of student management experienced with this class can only be understood within the wider structural locations of power relationships established between teachers and students in schools as social institutions based upon the principle of control'. (Smith 1992).

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