Integrating Multimodal Literacy Instruction into Turkish Language Teacher Education: An Action Research Study

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ABSTRACT In the 21st century, literacy requires one to understand and create not only letters but also sounds and visuals in different ways because we are surrounded not only by words but also multimodal texts in which words, sounds and visuals are combined in various ways. The purpose of this study is to investigate means of integrating multimodal literacy instruction into Reading Education, a course included in the curriculum of Turkish Language Teaching, and to identify what skills prospective teachers are required to have in the process. The study was based on the action research approach. A total of 37 prospective teachers participated in Reading Education courses, which took place four hours a week for 14 weeks. The study concluded that the skills required fall into three categories, namely, ICT skills, digital pedagogy skills and content-related skills.

INTRODUCTION

"When the music changes, so does the dance."

African Proverb

Multimodality is defined as "a framework that requires a collective interpretation of two or more scripts, visuals, videos, graphics, animations, sounds, music, gestures and facial expressions for producing meaning" (Kress 2010: 54). From a multimodal literacy perspective, what is important in today's language skills courses is not an analysis of the meaning produced separately by the scripts, words and visuals but an analysis of the meta-meaning produced collectively by these three elements (Kress 1998). Multimodal texts have the potential to lead to significant changes in language skills courses (Siegel 2006: 66). Therefore, the integration of multimodal literacy into language skills courses requires new knowledge and skills on the part of teachers.

The use of multimodal texts changes not only literacy but also literacy instruction (Harste et al. 1984: 208). The Qualifications and Curriculum Authority (QCA), the UK's official curriculum development agency, notes that multimodality makes "reading" and "writing" significantly dif-

ferent, for they change the traditional nature of texts in (1) composition and effects, (2) structure and organization, and (3) sentence order and spelling (QCA 2004: 3; 2005: 6).

In a case study on the use of multimodal texts in English, Math, Human Society and its Environment courses, Walsh (2009) reported that traditional literacy and its requirements undergo a change with the use of multimodal texts in courses; that there is a change in the skills required for reading and writing; and that interactivity emerges in the process. In another study on language skills courses integrated with multimodal literacy, Walsh (2010) shows that the use of multimodal texts changes these courses not superficially but profoundly. The author concludes that multimodal texts changes the nature of reading, writing, speaking and listening skills and thus the overall educational process in language skills courses (p. 220).

Research has suggested that students like multimodal texts more than printed texts (Bearne et al. 2012; Gecer and Dag 2012; Tuzel 2012, 2013). In addition, it has been emphasized that the use of multimodal texts results in changes in the process of teaching a class, testing and evaluation, participation in courses, and the roles of teachers and learners (Walsh 2010: 222; Munns et al. 2006). In the process of creating meaning, multimodal texts enable one to relate hearing, seeing and reading to one another and to organize them (Haggerty 2010: 187). With the use of multimodal texts in courses, students report using their cognitive skills more extensively, more creativity and being more attentive, participa-

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tory and productive in the classroom (Callow and Zammit 2012: 76; Lin et al. 2013). A change in the process of teaching a class and in the main actors means that teachers who are going to teach through these texts will need to learn new skills. Thus, teacher training is crucial for the integration of multimodal literacy into the educational system and it is essential that attempts should be made to identify the kind of knowledge and skills that teachers will need in courses where digital pedagogy is prevalent.

Research has suggested that teachers experience problems using new technologies and analyzing multimodal texts (Jewitt et al. 2007; Leu et al. 2004: 1600; Prain and Waldrip 2006; Yilmaz and Demirbilek, 2013). Since they have lived in a world dominated by printed texts, most teachers are an outsider to the digital world that characterizes students' lives (Lankshear and Knobel 2003). Owing to lack of capability, they serve as an obstacle to using materials to develop multimodal literacy skills in the classroom (King and O'brien 2002: 41), which leads to a digital divide between students and teachers. The digital divide between students and teachers refers to a situation in which students are interested and competent in using music, videos, computer games and other web texts while teachers are uninterested and incompetent in doing so (O'Brien and Bauer 2005: 126).

Turkish Context

In 2011, a national project was launched in Turkey in order to achieve a digital transformation in schools. The purpose of the project, known as the FATIH Project, is to provide all classrooms with high speed Internet and smart boards by 2014. Another objective is to give all students, starting from the third grade, tablet computers so that courses can be taught via smart boards and tablet computers. Pilot schemes are currently underway.

There are a limited number of academic studies on the FATIH Project. Although it is frequently covered superficially in newspapers or on television, it is difficult to say that the academic world has dealt with the issue as frequently. Most studies appear to be focused on determining problems. Some of these studies are based on teachers' readiness and opinions as to the use of technological devices such as smart boards and tablet computers (Gurol et al. 2012; Kayadu-

man et al. 2011), whereas others voice a prejudice against the practicability of the project (Guven 2012). The root cause is that teacher training is being neglected, according to a FATIH Project Workshop Report released in 2012 by independent academics from a number of universities.

Even though large-scale digital reform is expected to be completed soon in Turkey, no practical studies have yet been conducted. Thus the present study focuses on the integration of digital pedagogy into the teacher training system; the data derived should therefore be of significant value in the Turkish context.

Research has revealed that the use of multimodal texts in courses, in place of monomodal ones, leads to changes in the kind of knowledge and skills that teachers of language skills should possess. It is noted that teachers should have access to, read and understand all kinds of paper-based and electronic texts (newspapers, brochures, websites, books, kindle, etc.), enabling them to create messages as part of the virtual world (social media, blogs, wikis), and that they should design interactive and dynamic multimedia environments using Web 2.0 devices (Akkoyunlu and Yilmaz, 2011; Albers 2007; Cooper and White 2012; Cumming et al. 2012; Doering et al. 2007; Turner 2012; Wissman 2012). Therefore, the findings of the present study will hopefully make a contribution to identifying the digital knowledge and skills that the curriculum of faculties of education and in-service training for teachers need to focus on.

Purpose of the Study

The purpose of this study is to integrate multimodal literacy instruction into *TR 303 Comprehension Techniques I: Reading Education* (hereinafter called "CTRE"), a course that students of Turkish Language Teaching take in the fifth semester of university, so that prospective teachers of language skills can improve their abilities to use multimodal texts for educational purposes. Accordingly, answers were sought to the following question: What knowledge and skills do prospective teachers need for CTRE integrated with multimodal literacy instruction and how do prospective teachers view the new skills required for the course?

METHODOLOGY

The present study is an "individual teacher research" study following the action research approach. Individual teacher research is a method by which teachers carry out educational experiments that they have designed themselves in their own classrooms (Ferrance 2000: 3). The researcher in the present study integrated multimodal literacy into CTRE (thus intervening in the curriculum) and studied the effects through his own students.

Process of Action Research

Four steps were followed throughout the process (Fig. 1).

Step 1: Identifying the Problem and Review of Literature

The researcher conducted semi-structured interviews with final year students in the Turkish Language Teaching Department (f=67) in May 2012 (Tuzel 2013). During interviews, 82% of the prospective teachers (f=55) reported preferring multimodal texts with visuals, sounds and scripts to printed texts in their daily lives. However, when asked what kind of texts they would prefer to use in their teaching life, only a few of them (f=3) stated that they would use multimodal texts. All of the participants (f=67) without exception said "no" to the question as to whether they had been taught how to use multimodal texts in their courses. Afterwards, the researcher evaluated the findings and concluded that there was a contradiction between the prospective teachers' own lives and their education, which was reflected in the researcher's diary as follows:

"The prospective teachers' daily experiences of literacy are based on multimodal literacy. However, they have not been taught how to incorporate multimodal literacy skills into courses. As a result, they do not know how to use multimodal texts in teaching language skills and thus have low self-efficacy levels. I guess "digital divide" is not only experienced between teachers and students but also between teachers' own lives and classroom practices." (Researcher's Diary 14.06.2012)

To overcome the problem, the researcher decided to integrate multimodal literacy instruction into CTRE, the course he would teach the following academic year (2012-2013). Furthermore, a review of literature on the subject was carried out between June and September 2012 to find an answer to the question of how to integrate multimodal literacy instruction into CTRE, several studies by Gunther Kress et al. (Kress 2010a, b; Kress and Van Leeuwen 2001, 2010) were reviewed in order to understand the foundations of multimodality theory, and books and articles by Maureen Walsh, who has experience integrating multimodal literacy activities into the classroom (Walsh 2008, 2009, 2010, 2011) were studied. In addition, the Australian curriculum for language skills (ACARA 2011) was examined, in which multimodal literacy is integrated into the education system, together with reports published by the Qualifications and Curriculum Authority on incorporating multimodal literacy into language courses in the UK (QCA 2004, 2005). Additional sources (Binder and Kotsopoulos 2011; Doering et al. 2007; Miller and Borowicz 2006; Siegel 2006; Turner 2012) were also studied. This process continued until theoretical saturation was ensured, defined by Glesne (2010: 380) as the period when a review of the literature starts repeating the same situations, phenomena and notions.

Step II: Forming the Validity Committee

In action research, "The Validity Committee" is comprised of several academics who meet, discuss and decide on the findings of the researcher before, during and after the process. The circular structure of action research is thus ensured through the opinions of committee mem-
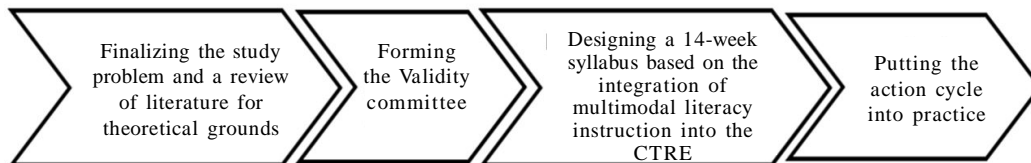
Fig.1. Action research cycle of the study

bers. Working with the committee, the researcher is able to make necessary decisions more appropriately and can apply these decisions on a weekly basis (Hubbard and Power 2003: 24).

In this study, four members (two Turkish language teaching specialists and two primary school teaching specialists) were included in the "validity committee" to check data, identify strengths and weaknesses of the process, present new perspectives, discuss problems, and make recommendations throughout the experiment.

Step III: Designing a 14-week Syllabus Based on Integration of Multimodal Literacy Instruction into CTRE

At this stage, a 14-week syllabus (4 x 14= 56 hours) was designed based on the integration of multimodal literacy instruction into CTRE course. In the present study, the "syllabus" refers to the "14-Week Syllabus based on Integration of Multimodal Literacy Instruction into CTRE". The Syllabus is presented in Appendix 1. The following steps were followed while the syllabus was being designed:

i. Accessing the content of CTRE as specified by the Turkish Council of Higher Education. Subjects included in the content were transferred to the 14-Week Draft Syllabus.
ii. Receiving the opinions of the validity committee as to how to associate the subjects included in the Draft Syllabus with multimodal literacy skills.
iii. Integrating the Draft Syllabus into multimodal literacy education in accordance with opinions of the committee and review of literature.
iv. Receiving opinions on the Draft Syllabus from six specialists from four universities who had taught CTRE, and finalizing the Syllabus (Appendix 1).

Step IV: Implementing the Syllabus and Updating Weekly Action Plan as per Opinions of Validity Committee

The present study, characterized by the planning, implementation, evaluation and reflection elements of action research (Walsh 2011), commenced on September 17, 2012 and was completed on December 12, 2012, a period of 14 weeks. Individual teacher research requires a series of converter methods such as planning, realizing the action, observation, evaluation (of oneself or experiment) and critical reflection (Burns 2007; Brydon-Miller 2002; Sagor 2005: 7). If the researcher had merely integrated multimodal literacy directly into the CTRE Syllabus, he would have neglected the converter nature of action research. Therefore, it was also necessary to reflect the converter nature of action research in activities to be carried out weekly. To do so, he designed the weekly action circle (Fig. 2) and repeated the circle 14 times (once a week).
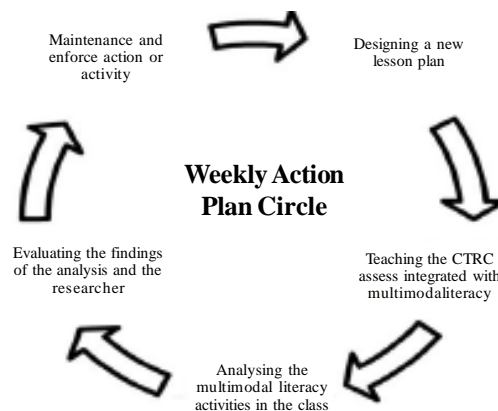
Fig. 2. Weekly action plan circle of the study

Environment and Participants

The study was carried out over 14 weeks in the department of Turkish Language Teaching, Faculty of Education, Canakkale Onsekiz Mart University, Turkey between September 17, 2012 and December 12, 2012 during the 2012-2013 academic year. The participants were 37 third-grade students who were taking CTRE. In accordance with the curriculum of Turkish Language Teaching, students are taught "general knowledge" and "teaching knowledge" in the first two years. They take courses in "teaching language skills" starting from the third grade. CTRE is one of these courses and is taught for 4 lesson-hours a week (two hours theoretical, two hours practical).

Data Collection

The data for the study were collected through interviews, documents, observations and video recordings. Interviews were conduct-

ed at the beginning and end of the process; activities were videotaped throughout the process; activity papers and diaries were analyzed; and structured, semi-structured and focus-group interviews were conducted with different participants throughout the process. In this way, the data were collected through nine data collection instruments: "researcher's diary", "prospective teacher's diary", "assistant researcher's diary", "prospective teacher activity files", "observation forms", "interview forms", "video recordings", "voice recordings" and "prospective teachers' Facebook shares and comments". A wide range of data collection instruments were used in order to ensure data diversity.

By the end of the process, the researcher had collected 51 hours of video recordings, 8.5 hours of voice recordings, more than one thousand pages of students' diaries, and 124 pages of researcher's and assistant researcher's diaries.

Data Analysis

A qualitative data analysis program called MAXODA© was used to code the data, find and organize the themes, and define and interpret the findings. This program was used because the data set was relatively broad. Furthermore, it was used to try and make the data analysis more open and systematic (Creswell 2008: 165).

Corbin and Strauss's (2008) descriptive analysis approach was adopted in the study. The steps followed in accordance with this approach are as follows (Fig. 3):

Trustworthiness

The following precautions included in the literature on qualitative studies (Johnson 2005: 21; Lincoln and Guba 1985) were adopted to improve the reliability of the study:

Recording Observations in a Complete and Meticulous Manner: Video and voice recordings, observation forms, prospective teachers' diaries, prospective teacher activity files and the researcher's diary were analyzed step by step and processed via MAXODA©. Another precaution was to collect the data in accordance with the data collection schedule.

Prolonged Engagement and Persistent Observation: The data collection process lasted for 15 weeks. Data from observations and interviews were collected and analyzed throughout the process.

Peer Review and Debriefing: The validity committee, set up within the scope of the study, held weekly meetings with the researcher for peer review and discussion.

Recording and Reporting Each Significant Point: In the weekly meetings, reports on the video and sound recordings were submitted to members of the validity committee and they were asked to comment on them. The data collection process was extended in accordance with the opinions and recommendations of the committee to record each significant point throughout the study, in order to work within the circular process of action research.

Objectivity in Defining and Interpreting Data: To ensure objectivity, the researcher coded the data twice and differences were analyzed comparatively. The comparative analysis was based on Miles and Huberman's (1994: 64) reliability formula:

$$Reliability = \frac{Number\ of\ Agreements}{Total\ Number\ of\ Disagreements + Agreements}$$

The equation should yield a reliability of at least 70% (Miles and Huberman 1994: 65). In the
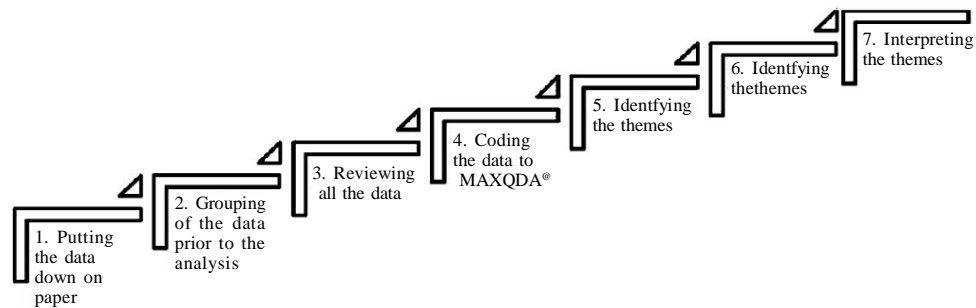
Fig. 3. Data analysis process

present study, the first coding and the second coding had a reliability of 61% and 76%, respectively.

Triangulation: Diversity was ensured both in data collection instruments and researchers. The researcher and the assistant researcher both served as participant-observers during the data collection. In addition, nine data collection instruments were used to ensure diversity. In this way, descriptions were based not only on the perceptions of different people but also on data from different instruments. Another component reflecting the diversity of the research was ensuring that the data were collected at different times.

RESULTS

Analysis of the data via MAXODA© reported that the skills that the prospective teachers needed for CTRE integrated with multimodal literacy fell into three themes (Fig. 4): Information and Communication Technologies (ICT) use skills, (2) digital pedagogy skills, and (3) content-related skills.
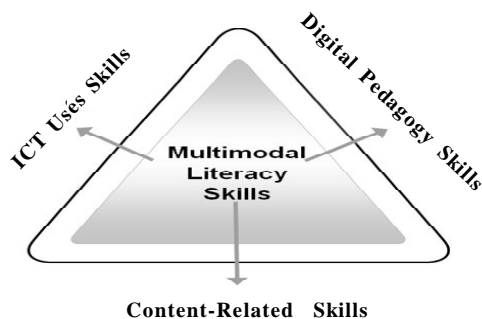

Fig. 4. Skills requires in courses

Required ICT Use Skills and Views on Required ICT Skills

Required ICT Use Skills

The data suggested that ICT knowledge and skills that prospective teachers needed in CTRE courses included having access to, creating, editing and sharing electronic messages. Furthermore, ethical issues such as copyright and security were included in the list. ICT knowledge and skills required by prospective teachers are presented in Table 1.

Table 1: ICT Knowledge and skills required by prospective teachers

- How to create and edit digital audio
- How to create and edit digital photos
- How to create and edit digital videos
- How to create and edit multimodal texts
- How to create screen capture videos and tutorials
- How to use tablet computers for reading education
- How to use smart boards for reading education
- How to use Youtube for reading education
- How to use Facebook for reading education
- How to share online files and content with students
- How to use digital assessment tools to create quizzes for reading education
- How to compile a digital e-portfolio for their own development
- How to design online platforms like blogs and wikis for students

It was found that prospective teachers should know about computer programs not only concerning written language but also visual and spoken applications. Therefore, the list proposed by prospective teachers included Microsoft Word®, Note Pad®, Open Office®, and Adobe Acrobat® for creating and editing written messages as well as Microsoft Moviemaker®, Camtasia®, Ulead®, Adobe Photoshop®, Adobe Indesign®, and Microsoft Paint® for creating and editing visual and verbal messages.

Another finding was that most of the prospective teachers did not really know how to access information and content via the Internet. They had problems using search engines, downloading files, uploading files and sharing files. Therefore, it was necessary to focus on the kind of knowledge and skills that would improve their abilities to "access", "create" and "share" information in electronic environments. In addition, an attempt was made to enhance their knowledge and skills through examination and tasks involving examples of social media (Facebook, Youtube, Twitter), Web 2.0 devices, wikis and blogs for managing and presenting content in electronic environments.

During the experimental stage of this study, with the integration of multimodal literacy into CTRE, ICT knowledge and skills occupied a prominent place in the content of the course due to the fact that the prospective teachers had low ICT readiness levels as they had not been provided with ICT knowledge or skills courses during their university education. All the courses they had taken were centered on paper and pencil technologies. Hence, lack of knowledge about skills to be used in electronic

environments, and their use, mattered greatly during integration of multimodal literacy into the CTRE.

Views on Required ICT Skills

During the first three or four weeks, the prospective teachers were commonly observed to make the following complaints: "We do not know how to use this program", "how do we do that?" and "this course is no different from a computer course". The underlying reason for this was that they had low ICT readiness and awareness levels. At the center of the complaints was the fact that they did not know how to use a particular technological device or computer program. Their complaints were reflected in diaries, video recordings and interviews. Whenever they were asked to use a technological device or computer program, they made similar complaints, though to a diminishing degree towards the end of the experiment.

At the beginning, the prospective teachers could not properly understand why topics aimed to improve their ICT skills were being covered. ICT use skills were considered irrelevant to reading pedagogy. Thus, the researcher had to allocate more time than planned to explaining the relationship between teaching language skills and ICT skills. After some time, the prospective teachers gradually comprehended the relationship between the two skills. Following this step, they began to be more highly motivated towards learning ICT skills. The change in their perspective was suggested by one of the participants attending a focus group interview at the end of the experiment:

"At the beginning, I could not tell whether it was a computer course or reading pedagogy course. It seemed to me that the frequent use of technological devices or explanations about computer programs caused us to wander from the core of the course. Nevertheless, I soon realized that ICT use skills are an indispensable part of teaching language skills... We need to have these skills in order to create and edit multimodal texts... Then (after I had realized this), it was easier for me to improve my skills in using ICT..." (Kemal, Focus Group Interview, 14.12.2012)

Although the prospective teachers had not fully seen the correlation between CTRE and ICT skills, they soon recognized how signifi-

cant ICT skills were. The courses they had taken before were not integrated with ICT skills. The following statement supports this idea:

"I did not have such a perspective on my job prior to this course. Videos, web pages, sound and visual editing programs... I realized that they are all intertwined with Turkish language courses (language skills courses). *I needed a number of new skills to use multimodal texts instead of printed texts, which made the course difficult for me. I wish we had been enabled to develop similar skills in the preceding two years at university. We took too many useless courses. I believe those courses should have been replaced by these. During the course, I realized that I had not fully known even how to search for something on "'Google'..."* (Gizem, Student's Diary, 12.12.2012).

Other prospective teachers often stated similar criticisms and wishes, which were reflected in the researcher's diary as follows:

"I guess I have proceeded to the second stage of my action research. The first weeks' criticisms like 'Why are we learning about these programs?' or 'How are they relevant to our course?' are over. Now I have managed to convince them that they will need ICT skills. Their criticisms have been converted into wishes such as 'Why didn't they teach us these skills before?' or 'Why did we take so many useless courses?' The current situation is more satisfying and things are going well with my study." (Researcher's Diary, 11.12.2012)

Required Digital Pedagogy Skills and Views on Required Digital Pedagogy Skills

The integration of multimodal literacy into CTRE led to fundamental changes in language and literacy skills such as reading, speaking, writing and listening, and new types of texts emerged. In short, radical changes were observed in the learning-teaching process. These changes can be concluded from the video recordings, interviews with students, and the diaries of the researcher and assistant researcher.

Required Digital Pedagogy Skills

A review of the literature suggests that digital technologies used in courses bring about their own pedagogy and fundamental changes in the process (Doering et al. 2007; King and

O'Brien 2002; Tyner 1998). The present study yielded similar findings to those in the literature. The pedagogy courses that the prospective teachers had taken in accordance with the conventional learning-teaching process were not enough to satisfy the requirements of CTRE, in which digital technology and skills were prevalent.

Prior to the study, the researcher had not planned to incorporate digital pedagogy subjects into courses. It was thought that the prospective teachers had already taken pedagogy courses (12 credit hours) in their first two years. These courses formed more than two-thirds of the pedagogical formation courses to be taken throughout their university education. However, the researcher observed in the first three weeks of the experiment that the pedagogical formation courses were insufficient for the new process integrated with multimodal literacy since these courses were based on printed texts and traditional methods. After a meeting held with the validity committee at the end of the third week, the syllabus was updated and subjects concerning digital pedagogy were included. The skills included in these subjects are presented in Table 2.

Table 2: Required digital pedagogy knowledge and skills

- Use of multiple literacy for reading education
- Use of time-based texts for reading education
- Use of testing and evaluation for reading education
- Use of static visual texts for reading education
- Use of video texts for reading education
- Use of verbal texts for reading education
- Use of multimodal texts for reading education

Texts used in language skills teaching have the potential to change the process of teaching a class (Chun and Plass 1997; Kerr 2006). The integration of multimodal literacy into CTRE enabled the types of texts to be diversified. In addition to printed texts, multimodal texts were used, which made it necessary for the prospective teachers to revise their perceptions of pedagogy in accordance with the requirements of digital pedagogy.

A significant amount of class time focused on explaining how to use visual texts, videos and multimodal texts in teaching language skills so that prospective teachers could develop digital pedagogy skills. Furthermore, an attempt was made to improve their pedagogical knowledge

about types of multiple literacy, such as visual literacy and media literacy, since the use of multimodal texts requires not only a single literacy (based on the alphabet) but also multiple literacies.

Changing and diversifying the texts required a corresponding change and diversity in the instruments used in testing and evaluating reading skills. To satisfy this need, the action plan was revised in accordance with the opinions of the validity committee. Accordingly, activities were conducted to enhance the prospective teachers' knowledge about, and skills in, designing and using the kind of testing instruments suitable for digital pedagogy and text processing.

Views on Required Digital Pedagogy Skills

At the beginning, the prospective teachers were observed to have difficulties in carrying out tasks and activities. The following conclusion was drawn from interviews: "Although prospective teachers use digital technologies in their daily lives, they do not know how these technologies can be used in language skills courses". Some of them noted that the previous courses they had taken at university had not provided them with an explanation of the use of multimodal texts. They attributed the difficulty they had in carrying out tasks and activities to the different qualities of multimodal texts compared to traditional printed texts. This problem is revealed by one student's statement:

"You say that we use most of these texts in our daily lives and we are digital natives. However, we do not know how to use them in courses. We use them for pleasure in our daily lives. On the other hand, courses have academic purposes and teaching objectives. We should certainly be provided with a more detailed explanation as to how these texts can be used for educational purposes..." (Bulent, Focus Group Interview, 03.10.2012)

The prospective teachers frequently complained about the insufficiency of the pedagogical formation courses they had taken beforehand. According to most of them, all the pedagogical formation courses had improved was their skills with printed texts. This view is reflected in the words of a student in her diary:

"...In the second grade, we took "Instructional Technologies and Material Develop-

ment", yet nobody explained to us how to edit a video or how to turn a photograph into a poster. We always designed materials out of paper or cardboard... We took "Written and Verbal Expression" but not any courses in visual expression ... Some things were missing..." (Ayse, Student's Diary, 13.12.2012)

It has already been mentioned that the use of digital technologies alters the process of teaching a class, the way teaching and evaluation is carried out, the way literacy is perceivedand the process of teaching language skills. The assistant researcher, a graduate of Turkish Language Teaching who took CTRE while at university, observed the change in CTRE as follows:

"I believe that the CTRE course has turned into something quite different. The process starts from scratch with the changing of texts. Certain subjects are still the same while others are brand new. It is necessary to reduce the intensity of the course. Students have to attain too many skills. If this is to be done, the preceding courses should be planned accordingly." (Assistant Researcher's Diary, 31.10.2012)

As stated by the assistant researcher, the integration of multimodal texts and digital technologies into CTRE did not lead to a local change. To the contrary, it made it necessary for the body of information the prospective teachers had already learned to be revised and modified. The researcher often had to refer to what the prospective teachers had learned before.

Required Content-Related Knowledge and Skills

In their first two years at university, students of Turkish Language Teaching are introduced to the works of Turkish literature and other literatures around the world. The main objective of these courses can be defined as "to introduce prospective teachers to national and universal works from different ages and to enhance their text anthology so that they have easy access to the texts they will use in their teaching career".

When the researcher asked the prospective teachers to use videos, visuals, voice recordings and web pages in the learning-teaching process, a significant problem emerged, for they did not have an anthology about multimodal texts in their mind although they had an idea about the topics and themes of a number of texts

in Turkish literature and other literatures around the world or, at least, had easy access to those texts. In fact, they did not know how to access multimodal texts, nor did they know how to decide whether these texts could be used in courses. The problem was stated in the researcher's diary as follows:

"...When told about a subject or theme, they can list dozens of literary works; however, they cannot do so when it comes to a visual, music or video even though they use them often in their daily lives... I guess the main problem here is that the students have never thought or been made to think about transferring the texts they use in their daily lives to language skills courses. They should be enabled to gain this perspective..." (Researcher's Diary, 17.11. 2012)

During the interviews with the prospective teachers about their problems accessing multimodal texts, most of them said that "they did not know how to access multimodal texts" and "they had never thought about using these texts in teaching language skills". The problem can be summarized in what one student said after the text he had brought into the classroom was criticized by the researcher:

"...Please just ask us to use texts, stories or novels that we can easily find in a library, for I do not know how to find the texts you request... They should be both multimodal and educational..." (Murat, Video Recording, 19.11.2012)

In order to overcome this problem, the prospective teachers were provided with activities such as explaining how to use youtube as a text store, introducing them to groups on Facebook that present short animations, films, etc., and showing them websites that have both English and Turkish content. The purpose was to enable them to have an anthology of multimodal texts.

Activities for analyzing visual expression required the use of different skills on the part of students. The researcher often had to mention semiotics, because the activities required use of the principles of semiotics. This problem might have resulted from the fact that the curriculum did not include a course in "semiotics". In fact, the students did not have any difficulty in transferring their knowledge about analyzing printed texts to the CTRE course. However, this was not the case for visual texts.

DISCUSSION

Several studies have suggested that ICT skills form an important dimension of multimodal literacy (Kress 2010a; Miller 2007; Walsh 2009, 2010, 2011). ICT skills are a significant area of competence in a learning environment where digital technologies are prevalent (Psycharis et al. 2013; Wang 2013). Therefore, the findings of the present study parallel those in the literature.

As the prospective teachers had a low ICT readiness level, an important part of class time was allocated to improving their ICT skills. The researcher, the prospective teachers and the assistant researcher noted that doing so increased their workload. In this respect, it might a better idea not to integrate multimodal literacy locally (Semali 2000: 33) into CTRE, but to integrate it into all the pedagogical formation and content courses in the curriculum (Semali 2000: 34). In the present study, the participants often complained that their previous learning was imperfect or deficient, which might have been caused by the fact that multimodal literacy was integrated only into CTRE.

While the multimodal literacy topics were being covered, the prospective teachers often had to revise the information and skills they had learned in pedagogical formation courses in accordance with the principles of digital pedagogy, which presented the necessity of extending pedagogical formation courses to include multimodal literacy and digital pedagogy skills. It is inevitable that digital technologies will be used in courses where multimodal literacy and texts are prevalent (Chun and Plass 1997; Goodwyn 2000), which is the case for CTRE. The use of digital technologies requires one to act in accordance with the principles of digital pedagogy in the learning-teaching process (Doeringn et al. 2007). Therefore, the integration of digital technologies and multimodal literacy into teacher training means that the other courses in teacher training should be comprehensively interrelated and changed.

Most of the skills required by the prospective teachers in the study should have been developed in the courses they had already taken at university. However, it was observed that all the courses had been taught in a manner dominated by printed texts. The prospective teachers could not transfer the skills they had already

gained to a learning-teaching process characterized by multimodal texts. Hence, it was concluded that the integration of multimodal literacy skills into CTRE does not mean that multimodal literacy has been integrated into teacher training. It is necessary that such integration should be planned for all courses on the curriculum adopting an in-depth and analytical approach.

CONCLUSION

It was observed that the integration of multimodal literacy was not confined to CTRE subjects but closely intertwined with the prospective teachers' readiness levels for certain skills and other courses they had taken at their faculty. It was found that the prospective teachers needed to develop new skills for CTRE integrated with multimodal literacy. These skills fell into three categories: (1) ICT skills, (2) digital pedagogy skills, and (3) content-related skills.

Most of the ICT skills required by the prospective teachers in the process were based on new learning whereas digital pedagogy and content-related skills were based on the revision of previous learning. In other words, the prospective teachers encountered ICT skills for the first time in CTRE. On the other hand, digital pedagogy skills and content-related skills required the prospective teachers' previous learning to be revised.

Since the purpose of CTRE is to develop one's multimodal literacy skills, multimodal texts were often included in courses. Thus, the prospective teachers had to work with electronic media devices such as videos, photographs, sounds and web pages in addition to printed texts. Their ICT skills had to be enhanced, for they were supposed to access, create and share texts in different media devices.

It is inevitable that emerging and developing communication devices and media will in time lead to various changes in the skills targeted by teaching language skills. Teaching language skills should include all texts and types of literature in accordance with current social, cultural and economic requirements. In this respect, 21st century literacy requires one to understand and create not only letters but also sounds (music, sound effects, speech, etc.) and visuals (static or dynamic, authentic or drawn) in different ways. The reason is that, in the real world, our lives are surrounded not only by words but also a com-

bination of words, sounds and visuals (multi-modal texts).

REFERENCES

ACARA 2011. *The Australian Curriculum: English (Version 2).* Sydney: ACARA.

Akkoyunlu B, Yilmaz A 2011. Prospective teachers' digital empowerment and their information literacy self-efficacy. *Eurasian Journal of Educational Research*, 44: 1-18.

Albers P 2007. Visual Discourse Analysis: An Introduction to the Analysis of School-generated visual texts. *Paper presented at the 56th National Reading Conference* in Texas University, Austin, TX, November 28 to December 1, 2007.

Bearne E, Wolstencroft H 2009. *Visual Approaches to Teaching Writing: Multimodal Literacy.* Los Angeles: Sage Publications.

Binder M, Kotsopoulos S 2011. Multimodal literacy narratives: Weaving the treads of young children's identity through the arts. *Journal of Research in Childhood Education,* 25(1): 339-363.

Callow J, Zammit K 2012. 'Where lies your text?': Engaging high school students from low socio-economic backrounds in reading multimodal texts. *English in Australia,* 47(2): 69-77.

Chun D M, Plass J L 1997. Research on text comprehension in multimedia environments. *Language Learning and Technology,* 1(1): 60–81.

Cooper K, White R E 2012. The recursive process in and of critical literacy: Action Research in an urban elementary school. *Canadian Journal of Education,* 35(2): 41-57.

Creswell J W 2008. *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches.* Thousand Oaks, CA.: Sage Publications.

Cumming J, Kimber K, Wyatt-Smith C 2012. Enacting policy, curriculum and teacher conceptualisations of multimodal literacy and English in assessment and accountability. *English in Australia,* 47(1): 9-18.

Doering A, Beach R, O'Brien D 2007. Infusing multimodal tools and digital literacies into an English education program. *English Education,* 40(1): 41-60.

Gecer A, Dag F 2012. Bir harmanlanmis ogrenme tecrubesi. *Kuram ve Uygulamada Egitim Bilimleri,* 12(1): 425-442 (in Turkish).

Glesne C 2011. *Becoming Qualitative Researchers: An Introduction.* 4th Edition. Boston: Pearson Education, Inc.

Goodwyn A 2000. *English in the Digital Age: Information and Communications Technology and the Teaching of English.* London: Cassell.

Gurol M, Donmus V, Arslan M 2012. Ilkogretim kademesinde gorev yapan sinif ogretmenlerinin FATIH projesi ile ilgili gorusleri. *Egitim Teknolojileri Arastirmalari Dergisi,* 3(3): 220-237 (in Turkish).

Guven I 2012. Egitimde 4+4+4 ve FATIH Projesi Yasa Tasarisi: Reform mu? *Elementary Education Online,* 11(3): 556-577 (in Turkish).

Haggerty M 2010. Exploring curriculum implications of multimodal literacy in New Zealand early childhood setting. *European Early Childhood Education Research Journal,* 18(3). doi: 10.1080/1350 293X.2010500073: 117-189.

Harste J, Woodward V, Burke C 1984. *Language Stories and Literacy Lessons.* Portsmouth, NH: Heinemann.

Hubbard R S, Power B M 2003. *The Art of Classroom Inquiry: Handbook for Teacher Researchers.* Portsmouth, NH: Heinemann.

Jewitt C, Moss G, Cardini A 2007. Pace, interactivity and multimodality in teacher design of texts for interactive white boards in the secondary school classroom. *Learning, Media and Technology,* 32: 303–317.

Johnson A P 2005. *A Short Guide to Action Research.* USA: Pearson Publishing.

Kayaduman H, Sirakaya M, Seferoglu S S 2011. Egitimde FATIH Projesinin ogretmenlerin yeterlik durumlari acisindan incelenmesi. *Akademik Bilisim'-XIII. Alkademik Bilisim Konferansi Bildirileri,* Malatya: Inonu Universitesi, February 2 to 4, 2011 (in Turkish), pp. 123-129.

Kerr R 2006. Perspectives on technology in learning and teaching languages. *TESOL Quarterly,* 40(1): 183-210.

King J R, O'Brien D 2002. Adolescents' multiliteracies and their teachers' needs to know: Toward a digital détente. In: Donna Alvermann (Eds.): *Adolescents and Literacies in a Digital World.* New York: Peter Lang, pp. 40-50.

Kress G 1998. Visual and verbal modes of represantation in electronically mediated communication: The potentials of new form of text. In: Ilana Snyder (Eds.): *Page to Screen: Taking Literacy into the Electronic Era.* New York: Routledge: pp. 53-79.

Kress G 2010a. *Literacy in the New Media Age.* London and New York: Routledge, Taylor and Francis Group.

Kress G 2010b. *Multimodality: A Social Semiotic Approach to Contemporary Communication.* London and New York: Routledge, Taylor and Francis Group.

Kress G, Van Leeuwen T 2010. *Reading Images: The Grammar of Visual Design.* 2nd Edition. London and New York: Routledge, Taylor and Francis Group.

Lankshear C, Knobel M 2003. *New Literacies: Changing Knowledge and Classroom Learning.* Berkshire, UK: Open University Press.

Leu D J, Kinzer C K, Coiro J, Cammack D W 2004. Toward a theory of new literacies emerging from the Internet and other information and communication technologies. In: Norman J Unrau, Rober B Rudell (Eds.): *Theoretical Models and Processes of Reading.* Newark, DE: International Reading Association, pp. 1570-1613.

Lin K L, Tsai F H, Chien H M, Chang L T 2013. Effects of a science fiction film on the technological creativity of middle school students. *Eurasia Journal of Mathematics, Science and Technology Education*, 9(2): 191-200.

Miles M B, Huberman A 1994. *Qualitative Data Analysis.* London: Sage Publication.

Miller S M 2007. English teacher learning for new times: Digital video composing as multimodal literacy practice. *English Education.* 40(1): 61-83.

Miller S M, Borowicz S 2006. *Why Multimodal Literacies? Designing Digital Bridges to 21st Century Teaching and Learning.* Albany, NY: SUNY Press.

Munns G, Arthur L, Downes T, Gregson R, Power A, Sawyer W et al. 2006. *Motivation and Engagement for Boys: Evidence-based Teaching Practices*. Canberra: Australia.

O'Brien D G, Bauer E B 2005. New literacies and the institution of old learning. *Reading Research Quarterly*, 40(1): 120-131.

Prain V, Waldrip B 2006. An exploratory study of teachers' and students' use of multimodal representations of concepts in primary science. *International Journal of Science Education*, 28(15): 1843–1866.

Psycharis S, Chalatzoglidis G, Kalogiannakis M 2013. Moodle as a learning environment in promoting conceptual understanding for secondary school students. *Eurasia Journal of Mathematics, Science and Technology Education*, 9(1): 11-21.

QCA 2005. *More Than Words 2*. London: QCA Publications.

QCA 2004. *More than Words: Multimodal Texts in the Classroom*. London: QCA Publication.

Sagor R 2005. *The Action Research Guidebook: A Four-Step Process for Educators and School Teams*. Thousand Oaks: Corwin Press.

Semali L M 2000. *Literacy in Multimedia America: Integrating Media Education Across the Curriculum*. New York: Falmer Press.

Siegel M 2006. Rereading the signs: Multimodal transformations in the field of literacy education. *Language Arts*, 84(1): 65-77.

Turner K 2012. Multimodal hip hop productions as media literacies. *Educational Forum*, 76(4): 497-509.

Tuzel S 2012. *Ilkogretim ikinci kademe Turkce derslerinde medya okuryazarligi: Bir eylem arastirmasi*. PhD Thesis, Unpublished. Canakkale Onsekiz Mart University, Canakkale. (in Turkish).

Tuzel S 2013. An investigation of prospective Turkish teachers' views regarding multimodal literacy teaching. *Journal of Theory and Practice in Education*, 9(2): 130-132.

Tyner K 1998. *Literacy in a Digital World: Teaching and Learning in the Age of Information*. Mahwah, New Jersey: Lawrence Erlbaum Associates Publishers.

Walsh M 2008. Worlds have collided and modes have merged: Classroom evidence of changed literacy practices. *Literacy*, 42(2): 101–108.

Walsh M 2009. Pedagogic potentials of multimodal literacy. In: Leo T W Hin, R Subramanian (Eds.): *Handbook of Research on New Media Literacy at the K-12 Level: Issues and Challenges*. US: Science Refference, Hershey, pp. 32-47.

Walsh M 2010. Multimodal literacy: What does it mean for classroom practice? *Australian Journal of Language and Literacy*, 33(3): 211-239.

Walsh M 2011. *Multimodal Literacy: Researching Classroom Practice*. Sydney: Primary English Teaching Association.

Wang T S 2013. Design and assessment of joyful mobile navigation systems based on TAM and integrating learning models applied on ecological teaching activity. *Eurasia Journal of Mathematics, Science and Technology Education*, 9(2): 201-212.

Wells G 2001. The development of a community of inquiry. In: G Wells (Eds.): *Action, Talk and Text: Learning and Teaching Through Inquiry*. New York: Teachers College Press, pp. 1-24.

Wissman K 2012. 'You're Like Yourself': Multimodal literacies in a reading support class. *Changing English: Studies in Culture and Education*, 19(3): 325-338.

Yilmaz E, Demirbilek M 2013. Secondary and high school teachers' perceptions regarding computer games with educational features in Turkey. *Anthropologist*, 16 (1-2): 89-96.