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PROF. DR. BÜLENT PEKDAĞ

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CONTENTS

Chapter 1

A CASE STUDY OF TEACHERS USE OF INSTRUCTIONAL METHODS IN ONLINE LEARNING AT EASTERN MEDITERRANEAN UNIVERSITY

<i>Bengi SONYEL</i>	1
<i>Leila MOKHTARI</i>	1

Chapter 2

EVALUATION OF DIGITAL STORIES AS TEACHING MATERIALS OF PRESERVICE TEACHERS OF ENGLISH LANGUAGE TEACHING

<i>Bilge ASLAN ALTAN</i>	17
<i>Güler GÖÇEN KABARAN</i>	17

Chapter 3

THE EFFECT OF SCHOOL ADMINISTRATORS' SPITEFULNESS BEHAVIORS ON TEACHERS' ORGANIZATIONAL HAPPINESS LEVELS

<i>Yalçın Varol YILDIZBAŞ</i>	39
<i>Seyfettin ABDURREZZAK</i>	39

Chapter 4

IDEOLOGICAL AND POLITICAL ASPECTS OF THE VISUAL IMAGES: A SEMIOTIC ANALYSIS OF ELT TEXTBOOK COVERS

<i>Serda GÜZEL</i>	57
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Chapter 5

THE USE OF GARDNER'S MULTIPLE INTELLIGENCE THEORY IN TEACHING ENGLISH TO PRESCHOOL LEARNERS

<i>Zamire İZZETGİL</i>	75
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Chapter 6

THE ROLE OF PARENT'S EDUCATIONAL INVOLVEMENT IN
STUDENTS' ACADEMIC ACHIEVEMENT BY BOTH SOCIOECONOMIC
STATUS AND PREVIOUS ACADEMIC ACHIEVEMENT

- Turhan ŞENGÖNÜL*.....107

Chapter 7

THE ROLE OF EXPLICIT ARGUMENTATION ON PRE-SERVICE
SCIENCE TEACHERS' COMPREHENSION OF ATMOSPHERE-
RELATED ISSUES

- Duygu METİN PETEN*127
Pınar Seda ÇETİN127

Chapter 8

A COMPARATIVE ANALYSIS OF PROOFREADING CAPABILITIES:
LANGUAGE EXPERTS VS. CHATGPT

- Nermin PUNAR ÖZÇELİK*147

Chapter 9

EVALUATION OF THE DEVELOPMENT AND IMPORTANCE OF THE
GENDER CONCEPT IN EARLY CHILDHOOD IN THE CONTEXT OF
BRONFENBRENNER'S ECOLOGICAL THEORY

- Merve KİRPITCİ*163
Nalan ARABACI163

Chapter 10

THE IMPACT OF SOCIOECONOMIC STATUS OR SOCIAL CLASS ON
COGNITIVE TEST SCORES OF CHILDREN

- Turhan ŞENGÖNÜL*.....185

Chapter 1

A CASE STUDY OF TEACHERS USE OF INSTRUCTIONAL METHODS IN ONLINE LEARNING AT EASTERN MEDITERRANEAN UNIVERSITY

Bengi SONYEL¹

Leila MOKHTARI²

¹ Asst.Prof.Dr Doğu Akdeniz Üniversitesi, Eğitim Fakültesi,
bengi.sonyel@emu.edu.tr, 0000-0003-0765-5408, Eastern Mediterranean University
² Ph.D in Education, Eastern Mediterranean University,
leila.mokhtari1984@gmail.com



Introduction

Online learning is a method of delivering educational information without needing to participate in classes on campus. It is nothing new, the technologies which are used in online classes is relatively new. Distance learning was born many years ago when the instructor sent lessons and received students' completed assignments by mail. Nowadays online courses are modern versions of their predecessors. Over the last decade, online education has become a way for students and faculty to utilize new media and tools to learn and deliver courses. Online educational options offer endless benefits necessary to accommodate a learner for future. 21st century learners should improve their skills offered through web.2.0 which is a new version of web to succeed. Nowadays due to the changes in lifestyle, some people who are time restricted by work requirement cannot participate in physical classrooms and online education provides them opportunity to high education. Consequently, demands for online classes are increasing and most universities are offering online courses to deliver their courses in instructional design. Online learning has been the greatest revolution in contemporary education. Some advantages of online learning include:

- More comfortable learning environment
- Convenience and flexibility
- Improve your technical skills.
- Lower total costs
- Variety of programs and courses
- Self-paced learning
- Variety of available sources around the world.

The differences between instruction in online courses and traditional classes are evident; the methods of delivering information, the type of interactions, and evaluating the results can be much different in virtual environment compared to traditional classes. However online courses are designed to transmit the same knowledge and skills as traditional courses, therefore instructors use the same instructional methods to the online teaching environment. Some of the instructional methods are used in online courses include:

- Lecture
- Discussion
- Demonstrations
- Simulations
- Case studies
- Problem based learning projects.

In recent years, online learning has become a major part of the educational world. Since the increase in demands for online classes and the effects of teaching methods on the quality of instruction, investigation of instructional design methods is an essential part of the educational world. Due to the importance of teaching methods which teachers use in online classes, discovering probable problems in the implementation of existing methods is important. The main online educators' issue is creating effective teaching methods in an online environment that foster actual learning and teaching with curiosity, energy, creativity, and problem-solving skills. Nowadays existing advanced communication tools help both teachers and students to have a real chance to make their learning experience as close to regular face-to-face situation. Therefore, teachers should adopt their teaching methods to create more effective learning environment.

Another point to consider is examining the degree of interaction in online classes; in the way that one of the major challenges for today's online instructor includes creating the high level of interaction to develop real learning and to promote students' abilities to work in real world. Meyer (2002) examined the amount of interaction in online environment and the effectiveness of some type of interaction in learning process and Meyer (2002) conclude that increasing interaction in online classes has significantly positive effects on student learning. Some of the instructional methods which can enhance interaction and authentic educational experiences are:

- Promote critical thinking.
- Relevant and engaging lecture
- Integrate stories into the class discussion.
- Provide students with flexibility.

Another point to consider is students' different learning styles. Based on research studies, students who have some specific characteristics are more successful in their online learning experiences. According to Vrasidas and Glass (2002) those characteristics are as fallow: internal locus of control, self-motivation, and independence. Furthermore, considering to the level of students' engagements in learning activities to gaining successful online learning is very significant. The issue of learners' engagement in activities and apply the best methods in online classes make some questions in mind. For instance, what are the best methods for supporting learners? How can we apply traditional methods in new setting? Which type of interaction should be enhanced to provide the best educational experiences for students? How to facilitate student collaboration? Which types of educational practices can create positive communication within the class? The aim of this research is to explore the existing teaching methods for two online courses which are Banking and Finance master's program and Hotel Management master's program at the Department of B&F and Faculty of TH&M and to investigate learners' perception on teachers' use of instructional methods for online learning in Eastern Mediterranean University (EMU). The aim of this research can be listed as follows:

- To reveal the teaching methods and which methods teachers use for online courses at the Department of B&F and Faculty of TH&M.
- To reveal the perceptions of students' regarding their online learning experiences.
- Assessing students' needs and their preferences in online learning environment.
- To find limitation and problems of existing teaching methods those are used by teachers for online courses.
- To suggest a more effective teaching method to teachers in orders to help them to deliver their information easily and to help students to have better online learning experiences.

1. Online Learning Approaches

Online learning can be fully online and blended learning with face-to-face interaction. Fully online is a form of online learning which all the instructional activities include presenting materials and assessment take place through the internet. However, blended or hybrid learning approach compose of face-to-face interaction and online. Moreover, the two approaches to online learning include asynchronous and synchronous methods. In Synchronous learning approach, the participants interact and collaborate at the same time and in the same virtual space. Participants are involved in direct interaction by asking and answering questions in real time. Asynchronous learning approach takes place anytime and anywhere. Participants are not expected to engage in instruction in real time and learning does not to be scheduled as a synchronous approach. It is a flexible and convenient method for people who combining education with other commitments.

1.1 Benefits of Online Learning

The web-based learning provides a significant scientific environment which in students and teacher can exchange information more easily. The web increases opportunity for learning because students have access to diverse conventional information and topics. It helps students to develop their knowledge and improve their 21st-century skills. Online learning as latest and newest version of distance education performs a significant role in the world of education today. The numbers of students who are enrolling in any distance education course are increasing. There are many advantages and uses of online learning such as:

1.2 Cost-Effectiveness

The cost of education especially postsecondary education is increasing faster than the inflation rate and the issue of education cost has been a big

challenge for students. As (Nguyen, 2015) noted that “*as of 2014, the total national student loan debt is over one trillion dollars*”. Educators believe that online learning can decrease the cost of education because the cost of class spread over much larger number students compared to the traditional classroom. However, it can be said that the large number of students can affect the quality of education, but teachers can solve this problem by using appropriate tools and teaching methods. In the same way, the marginal cost of a student includes the cost of transportation, and the requirements for the physical classroom are negligible compared to a traditional classroom.

1.3 Effectiveness in Educational Outcomes

Riffell and Sibley (2005) proposed that the most significant benefit of online format of education is the effectiveness in educating students. It is found that students who had online classes gained better result compared to face-to-face classes. Results include higher scores, students’ engagement in learning activities, having more meaningful learning and deeper understanding of courses. Nguyen (2015) found out that “*students who learned in blended format have the stronger sense of community and better outcomes compare to the traditional format*”.

1.4 Providing a World Class Education

According to (Nguyen, 2015) providing a world-class education is the most attractive aspect of online learning. Students who have different skills, information, languages, and cultures come to study and it’s a valuable training experience for students. Online education eliminates restrictions and borders. Students from anywhere at any time who have problem with their geographic situation and who have time limitation can attend online classes.

1.5 Rich Feedback and Evaluation

Easy communication in online learning environment cause students receives feedback from their classmates and teachers more easily. Teachers use some tools to put their result of tests and homework in a web page and it provides each student immediate feedback. Student access to grades of other classmate and they can assess their own performance. Additionally, online courses enhance teachers’ ability for measuring the results by using specific tools and techniques. As Appana (2008) mentioned that existing effective software and meaningful application has promoted the reality in evaluation.

1.6 Student Interaction and Satisfaction

Results of much previous research have shown that online learning can provide a student-centred learning environment and enhances interaction be-

tween students. Appana (2008) believes that the level of interaction in learning environment defines the course quality and satisfaction. Roblyer and Ekhaml (2001) have explained that students' satisfaction is positively impacted by providing three main conditions which are (a) using convenient technologies (b) designing course to support learner-centred instructional technology (c) determining the role of the instructor as a facilitator in class. Furthermore, due to the development of online resources online environment provide rich resources for online learners. Students access a wide variety of resources related to their knowledge area including online journals, relevant websites, and online libraries (Thurmond, 2003). Instructors can use different tools such as specific software which are designed for an online environment. Yerk-Zwickl (2003) explained that "Centra Symposium" is a collaboration software that has been used in distance teaching and learning. This software provides a web-based environment that can support live instructions, presentations and meetings and it can be used for creating a suitable and ideal environment for "highly interactive team collaboration, virtual classroom and handon training applications".

2. Disadvantages of Online Learning

2.1 The Lack of Control

According to (Smaldino, Lowther, & Russell, 2008) unfortunately, there is no organization or agency to control individual activities, discussed topics and new websites which are added to the internet daily. Control is in the hand of individuals. Everything is posting on the internet without the restrictions. Therefore, students might access information whose ages are not appropriate and too advance for their understanding. In addition, many numbers of new websites are adding to the internet daily. It can cause risk of information overload. Students might attack by the high volume of information on the internet. Consequently, finding relevant information can be difficult since there is no teacher in online classes to filter information. Diversity in online data might truly confuse young students. Another point to consider is verifying an online program's accreditation. Due to the lack of control on the internet, the number of accredited schools is increasing which earn money illegally and involve fraud. Students must check the validity of online program by using accrediting agency.

2.2 Copyright

Copyright is one of the main legal issues that can cause trouble in online education Because accessing and downloading information is easy, individuals can illegally appropriate files with minor changes in their concept while it's not their own work.

2.3 Ability to Access Course Materials

Expanding online courses need to design the course by considering the availability of software and hardware to students. Students without access to adequate technology who live in smaller Country may not to be able afford new computer equipment. (Flye, Gibson, Seemann, & Wilkinson, 2002) discussed that although nowadays people are making effort to put computers in college classrooms, the number of computers is not sufficient. Many of learners don't have access to the machine in their classrooms and in their homes. Electronic equipment is limited for many learners, and it causes a competitive condition between students who have access to technologies and who don't have.

2.4 Time Consuming

Bartolic-Zlomislic and Bates (1999) discussed that online learning and teaching can be time-consuming because of large amounts of readings (discussion forums) and writing required. Instructors need more time for providing materials and responding to students. Online education is not suitable for individuals who are not particularly good at time management, and they should stay away from web-based learning.

2.5 Technical Support

An online environment needs technological expertise to be readily available. Someone should provide web server access, necessary hardware and run software for holding online courses. Any kind of problem/s on a network can shut down online classes therefore probable technical problems should be estimated by educators in advance. Probable technical problems might occur during the classes. Those problems are troublesome in the case of video conferencing and virtual meeting. Issues such as internet speed and limited bandwidth which affect the quality of video and sound should be concerned in online classes. Consequently, establishing high-quality equipment before starting an online course by technical expertise is very significant. For instance, limited bandwidth means slower performance. Delivering educational materials such as video, sound and large graphics through the internet needs high speed and high bandwidth.

2.6 Reflective Practice

The terms “reflection” and “critical reflection” have increasingly appeared in descriptions of approaches to teacher education. It is a method of developing training skills and competencies. Lieberman & Miller (2000) cited in Sandhya Reddy (2014) pointed out that reflective teaching, reflective inquiry, and reflection-on-practice helps teachers to improve their professional skills

which is very important to be an effective teacher. Every teacher has own idea about the way of teaching according to his/her experiences or his/her beliefs. Reflecting on teaching practice helps teachers to evaluate their own teaching methods to make them stronger and more effective. Copeland et al. (1993) identified 12 critical attributes of a reflective practitioner. These include attributes relating to the identification of problems, the generation of solutions, the testing of solutions and learning from reflective practice. Teachers use this process to develop and reconstruct their understanding of an aspect of professional practice. Other attributes of the reflective practitioner have been identified as viewing oneself as a resource, using relationships with other teachers as resources and being aware of different kinds of knowledge from which to seek assistance. One idea that consistently emerges from the various definitions of reflective practice is the notion that students must be aware of and able to monitor their own thinking, understanding and knowledge about teaching to be a reflective practitioner. Reflective practitioners can identify a problem in their practice, the term ‘problem’ here meaning a situation/issue where there is some doubt about how to proceed (Parsons & Stephenson, 2005).

Distinguishing between qualitative and quantitative research approach is a methodological issue and choosing a specific methodology depends on the research questions. Both qualitative and quantitative approaches were used in this research. Case study approach was used to explore online teaching methods which were used for online courses and to reveal students’ perceptions regarding online programs in EMU (Eastern Mediterranean University). EMU was chosen as a case in order to examine the significance of online learning and teaching in depth. Choosing case study research strategy could be attributed to several reasons. As Yin (2003) proposed that case study is an effective method when our questions include “how” or “why” and when researchers don’t have control over current phenomenon. Considering the use and application of teaching methods and techniques, instructors were interviewed to explain their teaching methods and techniques that were used by them in details and to describe the advantages and limitations of online courses and students were surveyed. Examining in depth both students’ and teachers’ perceptions helped to suggest an alternative way to alter the current existing teaching and learning methods in online courses at EMU.

In terms of instructional methods, more than half of the students from both departments agreed that instructors could use similar methods in online classes and traditional classes. Whereas 35.4% of students from Department of B&F and 6.4% of students from Faculty of Tourism Hospitality and Management claimed that instructors might use different teaching methods in online classes and regular classes. According to the statistical data analysis, students believed that a variety of instructional methods such as presenting case studies and articles on web pages, online lecturing, using discussion forms and

creating small group works could be utilized in online classes by instructors. Another significant issue that could be considered was the interaction and collaboration between students in online classes. Results from both departments indicated that more than 60.4% of students from Department of Business and Finance (B&F) and 64.5% from Faculty of Tourism Hospitality and Management (TH&M) believed that existing instructional methods create adequate collaboration and interaction between students. On the contrary, 43.8% of students from Department of B&F and 29% from Faculty of TH&M reported that online courses didn't engage students in discussions, collaborative work and problem solving. Finally, regarding the various technology tools for online environment, statistical results showed that most of the students from both departments believed that appropriateness of technology tools in online classes were very significant.

Moreover, instructors believed that the existing online system in the university was not actually interactive. One of the teachers' said that current structure over online programs were not online actually, and he/she would categorize it as distance learning, and it was not interactive online program. Another one said these online classes were a type of self-study over the courses, and you needed to guide the students very well. Additionally, existing problems and limitations such as the lack of sophisticated tools and techniques didn't let instructors apply latest type of teaching methods in online classes. They claimed that basically, their communication material was email. There were not many other modules available and unfortunately, they have not applied those types of methods to their online classes which they used in everyday classes. Regarding the application of teachers' teaching methods in online classes, it could be said that altogether instructors were using the lecturing method for online courses in both departments. In this way that instructors prepared the instructional materials and then send them to the students. Students were expected to download and read the materials and do the assignments. According to Partlow and Gibbs (2003) online instructors should not deliver instructional materials to students, rather students must actively find materials. In addition, Partlow and Gibbs (2003) noted that teaching is a "process of helping learners construct or create their own meaning by providing them with authentic learning experiences and guiding them through the meaning making process". However, collected data represents misuse of the effective teaching methods for online classes.

Teachers revealed that each week they put updated information on the module system. In this system they write in details what were the expectations of the assignments that they expect. To follow the lectures, they asked students to prepare some assignments. These assignments are combination of reading materials and then searching related up-to-date information. Students were expected to read the concepts, understand the concepts, and find some

examples and prepare a report of assignment to submit. Instructors were asked a question about the tools and technologies that should be used in online classes. It could be said that overall teachers believed that nowadays there were plenty of tools and technologies for online environments and they could use various tools and technologies such as Module, online instructional website, Email, Skype, phone, and other existing tools in both departments. However, they said that many tools and technologies have not been established in their university yet. On the other hand, some of instructors claimed that sometimes they were using interactive tools such as Skype. Skype was the main tool for online classes and now they were using Skype in their classes plus if students need some more explanation related with the lecture, they used recorder to record voice and then send it to them. 70% of our communications with the students were through the module system and sometimes these communications were on the phone as well. Overall, it could be said that some instructors could, and some couldn't use the current technologies in their classes due to the lack of strong supervision and infrastructure for online courses.

To optimize online learning outcomes, it could be suggested that using reflective practice in online programs instead of traditional lecturing method could be more effective in teaching and learning process. In EMU case as an example lecturing method was the main teachers' teaching method for online courses, which is the traditional method of teaching in regular classes. Without using appropriate communication tools and technologies, implementing effective teaching methods and techniques were not possible. Students think that the appropriateness of technology tools to deliver course materials were the most important criteria to have an effective teaching method. Student-centred curriculum for the online programs, using suitable communication tools and technologies in online classes, attending in-service training programs and the degree of collaboration and interaction were the major issues that should be considered in online classes.

Furthermore, the lack of strong supervision and insufficient infrastructure were the two lacking issues for the online programs in EMU case study. Most of teachers like claimed that they couldn't implement their ideal form of teaching methods. In fact, without a fundamental infrastructure for online learning and without using appropriate tools and technologies implementation of the latest and effective teaching methods were not possible. They used the traditional teaching method which is just delivering information and assessing students based on their exams' grades. Continuing career long professional development is necessary for all educators to keep pace with change and to review and renew their own knowledge, skills, and visions for good teaching. The way educators behave as professionals is fundamental to the quality of classroom teaching and learning and is at the core of much research. Educators need to strive to find newer, better, and more efficient one which

means to achieve the task of educating, renewing, encouraging the next generation which is known as Continuing Professional Development. Continuing Professional Development is a commitment to ongoing lifelong learning. We all learn by doing, creating, thinking, and reflectively practising. As (Freire, 1996) said:

“I cannot teach clearly unless I recognise my own ignorance, unless I identify what I do not know, what I have not mastered”.

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Chapter 2

EVALUATION OF DIGITAL STORIES AS TEACHING MATERIALS OF PRESERVICE TEACHERS OF ENGLISH LANGUAGE TEACHING

Bilge ASLAN ALTAN¹

Güler GÖÇEN KABARAN²

¹ PhD., Muğla Sıtkı Koçman University, bilgeaslan@mu.edu.tr,
ORCID: 0000-0002-3309-933X

² PhD., Muğla Sıtkı Koçman University, gulergocen@mu.edu.tr,
ORCID: 0000-0002-2631-8768



INTRODUCTION

Surrounded by digital media, teachers are called for using technology in curricula as possible as they can so that instructional practices have manoeuvred to digitally-enhanced activities in variety of contexts. Responsively, there are available digital tools and resources which enable both teachers and students to be actively involved in teaching-learning processes. However, deciding which to use and combine with an addressed learning outcome can require extensive efforts (Verdugo & Belmonte, 2007), pedagogical concerns (Depalma & Alexander, 2018), and technical skills. Although it is convincing that technology is a need and has a power on teaching and learning activities (Hung, 2019), it is still fundamental for teachers to have an expertise to a certain degree in order to integrate meaningful and productive technology with an objective (Sadik, 2008).

As one of the most popular and widely-used tools, digital stories (DS) function as very effective and authentic digital materials through which teachers can engage their students in 21st century skills such as higher order thinking, constructing self-knowledge, critical thinking, creativity, and help them to make bridge between real-world and acquired knowledge (Behmer, Schmidt & Schmidt, 2006; Sadik, 2008). Connectedly, in order to use DS in any stage of instruction, teachers are expected to harmonize necessary digital components and pedagogy (Cetin, 2021). Still, there are summarized concerns of researchers that stress the lack of technical skills and pedagogical perspectives (DePalma & Alexander, 2018). They draw the attention at teachers' inadequate experience on digital storytelling procedures and using these stories in teaching. Initial teacher education programs, in this sense, can be favoured as an advantageous starting point to empower preservice teachers' both digital and pedagogical skills in designing DS.

FEATURES OF DIGITAL STORIES

Technically, there are concerned steps of digital stories, which Lambert (2013) underlines to capture a “good” digital story. Starting with the first one, he introduces the authenticity. Here, authenticity refers to author's self-reflection and insights while conveying the message through the story. The second one is related with emotions. According to Lambert, words have absolute power on our emotions so that the story should interweave the meaning and the emotions. In the following step, he reminds us the “moment” of the story in which readers are occupied by the intended message/meaning. The fourth and fifth steps in the act of digital storytelling are followed by bringing into life. In these steps, he encourages digital stories to be combined with audio-visual elements. Therefore, the audience can see and hear the story. The sixth step stands for gathering all the units of a digital story. Narrative elements and

audio-visual selections are harmonized. Then, the journey ends with seventh step in which the digital story is experienced by the audience.

Basically featured, digital stories are compositions of a plot filling with images, music, sounds, and text (Oskoz & Elola, 2016). In other words, DS are the animated products of digital components and narration (Hung, 2019). Narrative items of DS, here, can be generated via any context that may be appropriate with teaching intentions. To enable, there are publicly available and user-friendly software (Windows Movie Maker, PhotoStory etc.) and web sites (StoryJumper, StoryBird, Pawtoon etc.) for practitioners in which they can design and create their DS. Further, DS can increase the use of media and context to a greater extent, so that traditional ways of disseminating knowledge can be updated with digitally-enhanced instructions and materials.

DIGITAL STORIES AS TEACHING MATERIALS

Digital materials in teaching are important parts of technology-mediated learning environments as well as todays' instructional events in classroom (Demirkan, 2019). Reminding that technology is not the purpose of an instruction or act of teaching itself, digital materials are the organized and persistent delivery for students that are intended to have a mastery or progress in a certain field. They are commented as motivating, effective, updated and contemporary tools of teachers in teaching (Jobirovich, 2021; Kreijns, et. al, 2013). Further, researchers add the contributing effects of these materials on equipping both teachers and students with 21st century skills (Rotterham & Willingham, 2009) together with innovative and inclusive pedagogies (Ally, 2019).

Digital stories are reflections of digital materials and they are convenient to be adopted in kinds of teaching intentions. They are practical tools for digitally-enhanced learning environments for novel approaches in teaching and learning (Dakich, 2008) and useful to reinforce active learning of students from preschool to tertiary education (Xu, Park & Baek, 2011). According to Lazar (1993), applying short stories as DS in language teaching, for instance, is a reinforce to motivate and practice meaningful input. Addition to opportunities and benefits of digital materials that are echoed in literature, digital stories also support students' academic and social behaviours (Hewson, Danbrook, & Sieppert, 2015). Teachers can practice digital stories to assign their students with a task/project, to introduce a topic, to gain attention, and/or to give feedback (Robin, 2008). In any situation, they should work with multimedia and digital components that need to ally with necessary pedagogy, which invites teachers to be competent in generic and professional digital skills.

DIGITAL STORIES IN ENGLISH LANGUAGE TEACHING/LEARNING

Teaching English is an ongoing profession all around the world, and it is widely covered in compulsory curricula because English language is globally valued. Along with curricular activities, English, as lingua franca, is the medium of international communication for shared disciplines as business, science, social and global phenomena. It, therefore, heartens individuals not only to basically understand and speak English, but also to have mastery in using it.

Appreciations for English language inspire collaborators of language teaching to find practical ways of advancing language skills and performances of learners. To improve English proficiency, digital stories have been preferred to be involved in widely practiced pedagogical strategies (Lee, 2014). Also, they are assumed as active learning tools to promote students' performances in major language skills (Tsou, Wang & Tzeng, 2006). Types of studies have shared boosted language performances on reading skills (Alkhilili, 2018; Pathan, 2012), listening skills (Akdamar & Soner, 2021), speaking skills (Harroon, 2021; Yan & Zhao, 2019), and writing skills (Castillo-Cuesta et. al., 2021). Digital stories are not limited to be used for only core language skills while encouraging learners to have proficiency in English language. They can also be practiced as keen digital materials to increase motivation and positive attitudes of learners (Hava, 2019) as well as to enrich language instruction and activities.

THIS STUDY

English language, as one of the contexts, is very popular to be used in digital stories. There are compiled research (Brenner, 2014; Cigerci & Gultekin, 2017; Hung, 2019; Verdugo & Belmonte, 2007) on digital stories and digital storytelling in which findings make critical emphasis on contribution to development of language skills. Also, teacher-related studies (Barrett, 2006; Cetin, 2021; Kearney, 2009), which argue the experiences and practices in designing, generating, and presenting the DS, exist in the literature. Yet, it is fair to say that the issue of evaluating generated DS, as the teaching material itself, according to addressed learning outcomes can be underexplored. To be responsive, this paper aims to examine the digital stories as teaching materials to be used in English language teaching and collaborate with related studies in the area of digitally-enhanced teaching materials by highlighting pedagogical and technical necessities of these materials. Hence, the research questions the study is built upon are as: *To what extent are DS as teaching materials of ELT preservice teachers pedagogically appropriate to be used for reading and listening skills? To what extent are DS as teaching materials of ELT preservice teachers technically appropriate to be used for reading and listening skills?*

METHODOLOGY

Design

The study employed case study method, in which it is possible to collect detailed data and present a holistic perspective on individual experiences, group behaviours, limited practices, performances, interpersonal relations and many other (Yin, 2013). Referring to the intention of collecting specific data and reporting on limited practices, this study aims to evaluate digital stories of preservice teachers of English language teaching according to pedagogical and technical suitability as a teaching material.

Study Group

The study has been conducted with 35 sophomore preservice teachers of English language teaching that study in a Faculty of Education of a Turkish university. The study group was formed with purposeful sampling since the focus of the study is on evaluating DS as a teaching material in language teaching contexts. The participants are exposed to initial teacher education programmes including necessary pedagogy for teaching English as a foreign language. Although they have commonalities in their teaching knowledge, there is a possibility that they may have different digital capacities and opportunities to apply technology in teaching. The study group involved voluntarily and anonymously in all procedures of research intentions.

Data Collection Tools

Rubrics are accepted as appealing measurement tools to clarify the expectations and guide the individuals to meet these expectations. Rubric results can be used to decide on the quality of a work (Andrade, 1997). Leaning on the idea of rubrics, in the study, in order to collect data, two different rubrics, which were developed by the researchers, were employed. Initially, to provide consisting data, the relevant literature was reviewed. There exists literature that presents rubrics for digital storytelling and digital stories, yet there is not any context specific rubric to collect data for this study. Eventually, researchers decided to generate authentic rubrics to capture pedagogical and technical evaluations of experts on DS as teaching materials in language teaching. Ultimately, referring to the literature, researchers developed "*Subject-Specific Digital Stories Evaluation Rubric*" for English language teaching material, and "*Instructional Digital Stories Evaluation Rubric*" for appropriate technical aspects of digital stories.

While developing the rubrics, Andrade's (1997) processing steps were referred. Supporting literature and previously developed rubrics were carefully examined, then main criteria for the rubrics, categories and items were

formed. The criteria for the rubrics were determined as **excellent**, **good**, **needs improving**, and **poor**. To guide evaluators, what these criteria require for each item of the rubrics were explained in details. In order to enable analysis, the criteria were matched with numeric scores that range from 0 to 3. Draft versions of rubrics were sent to expert opinions. Through meticulous examination of experts in measurement and evaluation, content validity was approved and the rubrics were finalized.

Subject-Specific Digital Stories Evaluation Rubric was inspired by Lambert's (2013) suggestions for digital storytelling process and combined with language teaching pedagogy. It includes five main categories as *written narrative*, *vocabulary*, *voice and audio*, *organization*, and *material itself*. Written narrative aims to evaluate the authenticity in content and sentences, accuracy in grammar, and suitability to the addressed outcome in the digital story. Vocabulary section examines the use of word choices and richness. Voice and Audio controls the pronunciation, intonation, and use of supporting audios for emotions, characters and etc. Organization aims to evaluate the flow of the digital story; harmony among narration, audio, and visual elements; and duration. Material itself intends to evaluate creativity, practicality as a teaching material, and suitability for the addressed outcome and skill. The number of items and range of scores are briefly illustrated in Table 1.

Table 1: Description of Subject-Specific Digital Stories Evaluation Rubric

Categories		Range of Scores (Numeric and Nominal)	
	Number of Items	Total Score	Category
Total Rubric	16	0-12.00	Poor
		12.01-24.00	Needs improving
		24.01-36.00	Good
		36.01-48.00	Excellent
		Total Score	Category
Written narrative	3	0-2.25	Poor
		2.26-4.50	Needs improving
		4.51-6.75	Good
		6.76-9.00	Excellent
		Total Score	Category
Vocabulary	2	0-1.50	Poor
		1.51-3.00	Needs improving
		3.01-4.50	Good
		4.51-6.00	Excellent
		Total Score	Category
Voice and Audio	4	0-3.00	Poor
		3.01-6.00	Needs improving
		6.01-9.00	Good
		9.01-12.00	Excellent

		Total Score	Category
Organization	5	0-3.75	Poor
		3.76-7.50	Needs improving
		7.51-11.25	Good
		11.26-15.00	Excellent
		Total Score	Category
Material itself	2	0-1.50	Poor
		1.51-3.00	Needs improving
		3.01-4.50	Good
		4.51-6.00	Excellent

Instructional Digital Stories Evaluation Rubric, on the other hand, includes ten main categories as *point of view*, *dramatic question*, *emotional content*, *gift of voice*, *narration*, *power of the soundtrack*, *pacing*, *economy*, *unity*, and *creativity* which reflect suggested highlights of technical components of related literature. Point of view aims to evaluate the clarity in conveying the message. Dramatic question intends to examine the attraction of the digital story. In emotional content, the level of emotional connection between audience and the digital story is experienced. Gift of voice is analysed concerning purity, audibility, and intonation. Narration section controls the language whether it has daily use or appropriate official language. Power of the soundtrack aims to evaluate the suitability of all audio elements to the story. Pacing explores the flow of the story. Economy concerns whether the story has unnecessary details or not. Unity checks the organization of the story and the harmony of all aspects of the digital story. Lastly, creativity controls the authenticity of all materials included in the story. The number of items and range of scores are briefly described in Table 2.

Table 2: Description of Instructional Digital Stories Evaluation Rubric

Categories	Range of Scores (Numeric and Nominal)		
	Number of Items	Total Score	Category
Total Rubric	12	0-9.00	Poor
		9.01-18.00	Needs improving
		18.01-27.00	Good
		27.01-36.00	Excellent
Point of view		Total Score	Category
Dramatic question		0-0.75	Poor
Emotional content		0.76-1.50	Needs improving
Narration		1.51-2.25	Good
Pacing	1	2.26-3.00	Excellent
Economy			
Unity			
Creativity			

		Total Score	Category
Gift of the voice Power of the soundtrack	2	0-1.50	Poor
		1.51-3.00	Needs improving
		3.01-4.50	Good
		4.51-6.00	Excellent

The reliability of the rubrics was determined by the consistency between evaluators. 35 digital stories of preservice teachers of English language teaching were evaluated by 2 subject-specific experts and 2 technical experts. All the experts evaluated the DS independently and they followed the rubrics that they were given according to their expertise. The percentage of consistency scores of experts were calculated by referring to Miles and Hubermann (1994). The consistency percentage was calculated as .91 for subject-specific experts while it was calculated as .93 for technical experts.

Procedure

As stated in the aim of the research, the study concentrates on evaluating the digital stories of preservice teachers of English language as teaching materials. Because it is a long way procedure, the study is cooperated with variety of stages. Briefly, as an initial stage, preservice teachers of English were empowered on their digital capacities, particularly on Storyjumper, to design and generate digital stories. They were lectured about generic knowledge about digital storytelling, stages of it, necessary technical components of DS and the software (Storyjumper), and were encouraged to use their capacity on their own expertise. Here, Storyjumper was selected as an agent to prepare digital stories because it is user-friendly, free to use, and available to include digital elements of digital stories.

Additionally, to enable participants to generate their DS as teaching materials, they were expounded about necessary pedagogy of language teaching, curricular tenets, and instructional events. In order for preservice teachers to be able to originate useful teaching materials and to limit themselves with addressed learning outcomes in the curricula, they were given a list of outcomes that are only for 5th, 6th, 7th, and 8th graders and only for reading and listening skills. In the list, there are eleven reading outcomes for 5th graders; thirteen reading outcomes for 6th graders; twelve reading outcomes for 7th graders; and fourteen reading outcomes for 8th graders. On the other hand, there are fifteen listening outcomes for 5th graders; fourteen listening outcomes for 6th graders; thirteen listening outcomes for 7th graders; and fifteen listening outcomes for 8th graders. Finally, they were asked to design and generate their own DS according English lanaguage context in Storyjumper by referring to addressed learning outcomes of English curricula.

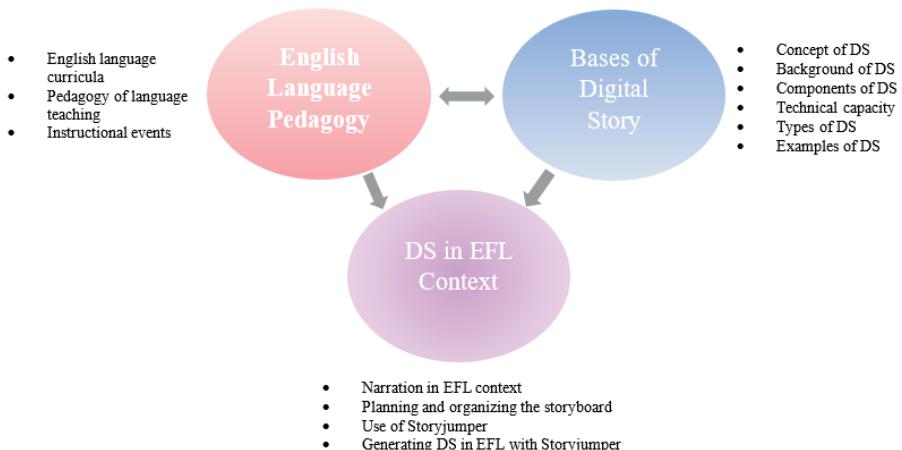


Figure 1: *Background Training of Preservice Teachers for Generation of DS as Teaching material*

Following, the originated DS as teaching materials were sent to evaluators since the study mainly concerns the suitability of the DS as teaching materials in English language context. Evaluators' reports were analysed and discussed touching upon nature of the study and insights for English language teaching. Some parts of the originated DS of different participants are shared below.



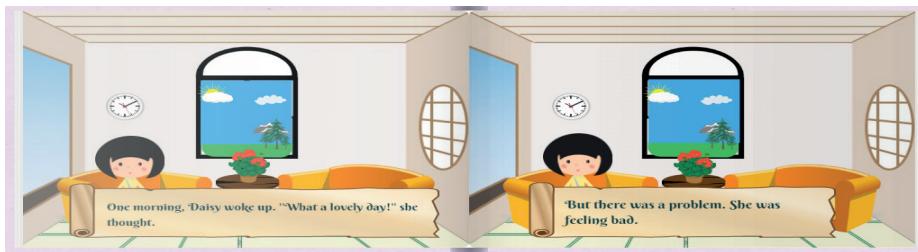


Figure 2: Different Scenes from Preservice Teachers' DS

Data analysis

The data were treated via calculating the mean scores of evaluators' rubrics. Firstly, all scores for each evaluator was calculated independently. The scores of each category in the rubric were also calculated independently for each evaluator. Then the scores were combined and their mean scores were determined. The final scores were matched with the nominal categories as excellent, good, needs improving, and poor; then reported.

Findings

Initial findings illustrate the association of generated DS and the addressed outcomes of English language including grade levels and skills. Accordingly, Table 3 presents preservice teachers' DS and their intended outcomes with language skills.

Table 3: General Information about Preservice Teachers' DS

Digital Story	Skill	Grade Level	Addressed Outcomes ¹
DS1	LISTENING	5 th Grade	E5.3.L1. Students will be able to understand simple, oral texts about hobbies, likes/dislikes and abilities.
DS2		Grade	E5.7.L1. Students will be able to understand simple requests for permission and their responses.
DS3		7 th Grade	E7.4.L2. Students will be able to identify the names of wild animals in simple oral texts.
DS4		Grade	E7.4.L2. Students will be able to identify the names of wild animals in simple oral texts.

¹ The presented outcomes include a sequence of grade levels and units of English curricula. In the curricula, for instance, abbreviations (**E5.3.L1.**) stand for English course (**E**), grade level (**5**), unit number (**3**), language skill (**L-listening**), and addressed outcome number (**1**).

DS5	E5.2.R1. Students will be able to understand information about important places.
DS6	E5.2.R1. Students will be able to understand information about important places.
DS7	E5.2.R1. Students will be able to understand information about important places.
DS8	E5.3.R1. Students will be able to follow a simple story with visual aids.
DS9	E5.3.R1. Students will be able to follow a simple story with visual aids.
DS10	E5.3.R1. Students will be able to follow a simple story with visual aids.
DS11	E5.3.R1. Students will be able to follow a simple story with visual aids.
DS12	E5.3.R1. Students will be able to follow a simple story with visual aids.
DS13	E5.4.R1. Students will be able to understand short and simple written texts about daily routines.
5 th Grade READING	E5.4.R1. Students will be able to understand short and simple written texts about daily routines.
	E5.4.R1. Students will be able to understand short and simple written texts about daily routines.
	E5.5.R1. Students will be able to understand short and simple texts about illnesses, needs and feelings.
	E5.5.R1. Students will be able to understand short and simple texts about illnesses, needs and feelings.
	E5.8.R1. Students will be able to understand simple texts about sports activities.
	E5.8.R1. Students will be able to understand simple texts about sports activities.
	E5.10.R1. Students will be able to understand visually supported short texts about festivals around the world.
DS21	E5.10.R1. Students will be able to understand visually supported short texts about festivals around the world.
DS22	E6.3.R1. Students will be able to understand visually supported, short and simple texts.
DS23	E6.4.R1. Students will be able to understand short and simple texts about the weather, weather conditions and emotions.
DS24	E6.4.R1. Students will be able to understand short and simple texts about the weather, weather conditions and emotions.
6 th Grade	E6.8.R1. Students will be able to understand short, simple sentences and expressions about past events with definite time.
	E6.9.R1. Students will be able to understand the texts about the protection of the environment.
	E6.9.R1. Students will be able to understand the texts about the protection of the environment.
DS28	E7.4.R1. Students will be able to understand past and present events in simple texts including explanations and reasons.
DS29	E7.4.R2. Students will be able to spot the names of wild animals in simple texts.
DS30	E7.4.R2. Students will be able to spot the names of wild animals in simple texts.
DS31	E7.4.R2. Students will be able to spot the names of wild animals in simple texts.
7 th Grade	E7.5.R1. Students will be able to understand simple texts about daily routines and preferences.
	E7.5.R1. Students will be able to understand simple texts about daily routines and preferences.
DS34	E7.5.R2. Students will be able to understand simple texts about past events.
DS35	E8.8.R1. Students will be able to understand various short and simple texts about responsibilities.

Examined in detail, digital stories of preservice teachers generated for reading skills ($n=31$) outnumber the ones for listening skills ($n=4$). Concerning grade levels, preservice teachers opted to generate digital stories for 5th graders ($n=19$) at most. Additionally, they delivered digital stories for 7th graders ($n=9$), 6th graders ($n=6$), and 8th graders ($n=1$). Although there are 50 addressed outcomes for reading and 57 for listening skills in English language curricula for secondary education, findings revealed that DS are limited to capture 17 different outcomes in total.

As stated in methodology section, the DS were evaluated by four experts, two of whom are subject-specific experts and two of whom are technical experts. The experts evaluated the DS in terms of pedagogical relevance and technical appropriateness. The findings of English language experts, according to rubrics, are illustrated in Table 4 below.

Table 4: Findings of English Language Experts' Evaluation

	E1 Total Score	E2 Total Score	Mean	Category
DS1	31	40	36	Good
DS2	35	34	35	Good
DS3	47	46	47	Excellent
DS4	34	36	35	Good
DS5	46	44	45	Excellent
DS6	34	36	35	Good
DS7	44	47	46	Excellent
DS8	39	43	41	Excellent
DS9	40	41	41	Excellent
DS10	45	47	46	Excellent
DS11	46	47	47	Excellent
DS12	41	45	43	Excellent
DS13	37	41	39	Excellent
DS14	41	44	43	Excellent
DS15	41	43	42	Excellent
DS16	40	44	42	Excellent
DS17	46	48	47	Excellent
DS18	44	45	45	Excellent
DS19	43	41	42	Excellent
DS20	47	47	47	Excellent
DS21	45	43	44	Excellent
DS22	44	44	44	Excellent
DS23	48	48	48	Excellent
DS24	47	45	46	Excellent
DS25	35	37	36	Good
DS26	41	42	42	Excellent
DS27	42	43	43	Excellent

DS28	47	45	46	Excellent
DS29	44	45	45	Excellent
DS30	46	45	46	Excellent
DS31	47	46	47	Excellent
DS32	44	43	44	Excellent
DS33	48	43	46	Excellent
DS34	46	41	44	Excellent
DS35	46	36	41	Excellent

According to the evaluations of subject-specific experts, as illustrated in Table 4, the generated digital stories include pedagogically appropriate contexts. The findings highlight that 30 DS had pretty high scores from rubrics, which mean they are in excellent category. The remaining 5 DS, though are not excellent, were found good enough to be used as a pedagogically appropriate teaching materials in English language courses.

Furthermore, to better describe the DS, the evaluations of subject-specific experts were analysed and reported following categories of rubrics, which are titled as written narrative, vocabulary, voice and audio, organization, and material itself. Each digital story of participants was scored according to the categories; eventually total mean scores of DS were matched with the nominal category of the rubric. It is illustrated in the Table 5 below.

Table 5: Findings of English Language Experts' Evaluation According To Categories of the Pedagogy-Based Rubric

Categories of Rubric	E1 Total Mean	E2 Total Mean	Total Mean	Nominal Category
Written narrative	8.28	8.20	8.24	Excellent
Vocabulary	5.57	5.43	5.5	Excellent
Voice and Audio	9.08	9.80	9.44	Excellent
Organization	14.22	14.40	14.31	Excellent
Material itself	5.65	5.37	5.51	Excellent

Table 5 reflects that generated DS were well organized when the basic pedagogical elements were concerned. According to expert evaluations, pre-service teachers could design and deliver pedagogically appropriate texts, include necessary lexis, add supporting audio, use correct pronunciation, organize the story smoothly, and connect the story with the addressed outcomes.

However, the digital stories were not only evaluated by subject-specific experts, but also technical experts. The evaluation results of technical experts are embodied in Table 6.

Table 6: Findings of Technical Experts' Evaluation

	TE1 Total Score	TE2 Total Score	Total Score	Category
DS1	11	17	14	Needs improving
DS2	22	28	25	Good
DS3	24	31	28	Excellent
DS4	25	29	27	Good
DS5	32	33	33	Excellent
DS6	21	18	20	Good
DS7	34	34	34	Excellent
DS8	32	20	26	Good
DS9	24	24	24	Good
DS10	36	32	34	Excellent
DS11	34	28	31	Excellent
DS12	27	24	26	Good
DS13	26	24	25	Good
DS14	28	26	27	Good
DS15	27	20	24	Good
DS16	27	23	25	Good
DS17	32	34	33	Excellent
DS18	21	26	24	Good
DS19	17	18	18	Needs improving
DS20	36	35	36	Excellent
DS21	34	33	34	Excellent
DS22	30	28	29	Excellent
DS23	33	33	33	Excellent
DS24	35	33	34	Excellent
DS25	18	17	18	Needs improving
DS26	25	31	28	Excellent
DS27	24	31	28	Excellent
DS28	30	29	30	Excellent
DS29	26	27	27	Good
DS30	29	36	33	Excellent
DS31	36	36	36	Excellent
DS32	30	30	30	Excellent
DS33	29	31	30	Excellent
DS34	31	32	32	Excellent
DS35	31	29	30	Excellent

Table 6 reports a different scenario from prior results since there are technically inappropriate digital stories according to experts. In a technical perspective, 20 preservice teachers could generate excellent DS whereas 12 of them did relatively good works and 3 of them missed certain technical elements of digital stories.

In details, technical experts evaluated the DS according to categories of the rubric, which are titled as point of view, dramatic question, emotional con-

tent, gift of voice, narration, power of the soundtrack, pacing, economy, unity, and creativity. Each digital story of participants was scored according to the categories; eventually total mean scores of DS were matched with the nominal category of the rubric. It is illustrated in the Table 7 below.

Table 7: *Findings of Technical Experts' Evaluation According To Categories of the Technical-Based Rubric*

Categories of Rubric	TE1 Total Mean	TE2 Total Mean	Total Mean	Nominal Category
Point of view	2.71	2.49	2.60	Excellent
Dramatic question	2.43	2.31	2.37	Excellent
Emotional content	2.29	2.31	2.30	Excellent
Gift of voice	5.03	4.69	4.86	Excellent
Narration	2.54	2.69	2.62	Excellent
Soundtrack	3.51	3.43	3.47	Good
Pacing	2.51	2.40	2.46	Excellent
Economy	2.46	2.40	2.43	Excellent
Unity	2.14	2.37	2.26	Excellent
Creativity	2.29	2.91	2.60	Excellent

Table 7 reports that generated DS were well organized when the basic technical elements were concerned. According to expert evaluations, preservice teachers could generate digital stories that include a point of view and dramatic question; present an emotional content, supporting voice and narration; are relatively appropriate soundtracks; have rhythm and economy; are unified and creative.

Discussion and Conclusion

As one of the attractive results of the study, subject-specific evaluators found the DS of preservice teachers as excellent, which means that these are suitable materials for language teaching in a pedagogical manner. In particular, preservice teachers can successfully originate narration in English language for an addressed outcome, use appropriate grammar and vocabulary, accurately pronounce, follow a sequence, and deliver a teaching material. It may also be a sign for positive and welcomed improvement in preservice teachers' pedagogical skills as well as an insight for the training they were given before they were asked to generate a digital story. This finding has a consistency with the idea of Fleer (2017) and DePalma & Alexander (2018) underlining the necessity of pedagogical abilities to combine technology and instruction in harmony. On the other hand, technical experts of the study stated that most of the digital stories were excellent and good, although there were few ones that need improving. In general, digital stories of the study contain basic and

necessary elements of digital stories, yet the power of the soundtrack can be strengthened. Overall, the findings support that preservice teachers could able to generate technically appropriate DS, which can also be an indicator that preservice teachers were empowered in their digital capacities to actively use an agent to prepare a proper digital story. Eventually, it is possible to discuss that a well-organized path for preservice teachers to prepare a teaching material of DS should not only include technical and digital perspective, but also pedagogical and instructional one as the existing literature proposes (Cetin, 2021; Sadik, 2008; Kearney, 2009).

In the study, it is assumed that preservice teachers had the opportunity to combine their content knowledge, technical knowledge, and pedagogical knowledge. This assumption leads us to better understand what Mishra and Koehler (2006) suggest with their TPACK model. The model reminds us to guide preservice teachers to use their three main knowledge area in producing and delivering effective digitally-enhanced materials and instructions. In other words, to develop a digital story as a teaching material, preservice and in-service teachers are expected to have a mastery in using technology, benefiting from necessary pedagogy, and adapting their major content area (Yılmaz, Üstündağ, & Güneş, 2017).

With a similar perspective of TPACK, Graham (2011) encourages that digital story design procedure has commonalities and complementary elements with TPACK. According to this suggestion, in the steps of digital story making, designers should select a content/topic/subject matter, which stands for content knowledge (CK) of the model; designers should embody a message into the digital story, which is a reminder of pedagogical knowledge (PK); designers should create an authentic narration, which needs methodology, therefore, pedagogical content knowledge (PCK). When these steps are combined with digital components, designers need to use technology based skills and eventually they practiced technology knowledge (TK), technological content/pedagogical knowledge (TCK/TPK), and technological pedagogical knowledge (TPCK). In the study, this assumption is valued through the training for DS design and the evaluation process of the DS as materials.

Digital stories have been valued to be studied in many educational contexts and research area which cover preschool to higher education. Digital story studies reflect that not only researchers but also participants tend to develop digital stories (Xu et. al, 2011). Because it is also a design-based practice (Robin, 2008), digital storytelling includes different learning activities (Diermyre & Blakesley, 2009). When young learners, in particular, are considered as digital natives, they can be much more capable of using digital agents in their learning. There are many studies (Baki & Feyzioğlu, 2017; Dahlström & Damber, 2020; Demirer, 2013; Küçükoglu & İncikabı, 2020; Ulum & Erçan Yalman, 2020) pinpointing that students in different levels of secondary

education can design and develop digital stories in different contexts such as social sciences, maths, science, and language as long as they are well-guided. Besides being a role model, we also wish to draw attention to the suitability of DS as teaching materials because in initial teacher education programmes, preservice teachers have many opportunities to practice micro version of any instructional event. We can reinforce future teachers' teaching skills and their progress in this journey to a larger extend if we care and carefully examine their performances and outcomes.

As in all studies, this study is also limited to its context, methodology, participants, and data collection. Nonetheless, we wish to start a discussion point in English language teaching by suggesting and encouraging the related collaborators to concern technology and pedagogy in digital material design, specifically digital stories. Following studies can be enriched with addressing different skills with different digital stories of teachers/teachers-to-be. Alternative methodologies and digital storytelling agents can be studied in future studies as well.

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Chapter 3

THE EFFECT OF SCHOOL ADMINISTRATORS' SPITEFULNESS BEHAVIORS ON TEACHERS' ORGANIZATIONAL HAPPINESS LEVELS¹

Yalçın Varol YILDIZBAŞ²

Seyfettin ABDURREZZAK³

1 This study was presented as a paper at the 2022 Trb2 International Congress
On Educational Sciences.

2 Doctor, Provincial Directorate of National Education, Van/Turkey,
e-mail: yalcinvarol@hotmail.com,
ORCID ID: <https://orcid.org/0000-0002-9134-4276>.

3 Doctor, Provincial Directorate of National Education, Edirne/Turkey,
e-mail: srezzak@hotmail.com,
ORCID ID: <https://orcid.org/0000-0001-9892-7506>.



Introduction

Educational organizations are open systems established to meet the educational needs of the society and to realize the determined objectives. In these organizations, the feelings, thoughts and behaviors of individuals are of great importance, and it is considered necessary to ensure organizational efficiency and effectiveness. In addition to positive feelings and thoughts, negative feelings and thoughts are also effective in the behaviors that occur in organizations. While malice can be counted among the negative emotions in organizations, happiness is among the positive emotions. The concept of spite is that individuals secretly feel hostility towards those who are against them. Behaviors made with this feeling can have negative consequences in organizations (Kiral & Nayir, 2019: 1). Spite emerges as a result of the individual's constant feeling of anger towards others (TenHouten, 2007). Not meeting the demands of individuals, being exposed to injustice, confronting with aggressive attitudes and preventing them from reaching their goals cause this anger to hold as well as to hold spites (Atkinson et al., 1996).

Spitefulness is the determination of individuals with the thought of harming others despite paying any price (Marcus et al., 2014). Malicious individuals take pleasure in this situation by wanting others to be harmed, even if it costs them a great deal (Wright, 2003). It is possible to say that the negative feelings of the members of the organization, who tend to be spiteful mostly arise in the place and time of anger or violence (Aron, 2001).

While one of the negative emotions emerging in organizations draws attention as spitefulness, this situation can cause feelings such as alienation, professional burnout and cynicism (Kocyigit & Tekel, 2021). If the employees of the organization are not in harmony, they can often hold spites (Somer et al., 2002). Employees may be inclined to spitefulness when they cannot take revenge as a result of the victimization they have experienced in the organizations they are in (Usta et al., 2019). Individuals who hold spites tend to leave the organization and have the thought of not returning (Huefner & Hunt, 1992).

The concept of happiness is that individuals have a perspective on characterizing their lives positively (Myers & Diener, 1995). The fact that people are comfortable with their conscience is an indicator of happiness (Farabi, 1993). This concept is expressed as "subjective well-being". This subjective well-being occurs with emotionally positive and negative emotions and cognitive life satisfaction (Andrews & Withey, 1976; Diener, 1984; Kangal, 2013).

Organizational happiness is a state of internal well-being that can be measured based on the perception of employees in organizations. This state of individuals shows that the organization is happy (Bulut, 2015). The way of thinking that enables employees in organizations to perform at the highest

level and to display their current potential expresses organizational happiness (Pryce-Jones, 2010).

Organizational happiness is one of the elements that determine the general happiness of the employees and affect this happiness. Because the value of the positive and negative emotions in the organizations for the employee determines the perception of happiness by affecting his motivation (Stutzer & Frey, 2012). The concept of happiness in organizations is evaluated together with the concepts of emotional, cognitive and revealing its potential. While this perception is revealed by focusing on the emotions of the employees in the emotional aspect and based on the mental processes in the cognitive aspect, the skills of revealing their potential are affected emotionally and create organizational happiness (Daniels, 2000; Waterman, 1993).

Employees who are happy in organizations are expected to see benefits such as more earnings, more support from other employees, effective communication with them, easier promotion, easier learning, fulfilling their goals more quickly, and being healthier (Boehm & Lyubomirsky, 2010).

Since people working in organizations are emotional, this creates the emotional aspects of organizations (Fineman, 1993). For this reason, it is important to determine the emotions of the employees in the organizational structure. In this respect, the main purpose of the research is to determine the perceptions of administrative spitefulness and organizational happiness of teachers, which are seen as the most important element of educational organizations. In line with the purpose of the research, answers are sought for the following sub-problems:

- What are the teachers' perceptions of the administrative spitefulness of the school principals working in their schools?
- What is the level of teachers' perception of organizational happiness?
- Do the perceptions of the school principals working in the schools where the teachers work, regarding the administrative spitefulness behaviors differ according to their demographic characteristics (gender, seniority, type of school they work in)?
- Do teachers' perceptions of organizational happiness differ according to their demographic characteristics (gender, seniority, type of school they work in)?
- What is the relationship between the perceptions of the school principals working in the schools where the teachers work, regarding the administrative spitefulness behaviors and the perceptions of organizational happiness?

In the literature review, it is noteworthy that the studies on organizational spitefulness are very limited (Bunker & Ball, 2008; Elma, 2019; Kiral &

Nayir, 2019). There are many studies on organizational happiness (Boehm & Lyubomirsky, 2008; Bulut, 2015; Cetin & Polat, 2021; Daniels, 2000; Kahveci & Köse, 2019; Kangal, 2013; Myers & Diener, 1995). The absence of any research examining the perceptions of happiness, which is one of the negative emotions of organizational employees, and spitefulness, which is one of the positive emotions, makes the research unique and important.

Methodology

Research Model

The aim of this research is to examine the relationship between teachers' administrative spitefulness perceptions and their organizational happiness. Relational scanning model was used in the research, and relational scanning models are the research model in which two or more variables change together and/or the degree of change is tried to be determined (Karasar, 2010).

Universe and Sample

The universe of the research consists of 2,263 teachers working in public schools in Edremit district of Van province in Turkey in the 2021-2022 academic year. The sample of the study consists of 262 teachers working in 20 schools selected from the population by simple random sampling method. The demographic characteristics of the teachers participating in the research are given in Table 1.

Table 1. Frequency and percentage distributions of teachers' demographic characteristics

Variable	Groups	f	%
Gender	Female	112	42,75
	Male	150	57,25
Professional Seniority	0-5 Year	90	34,35
	6-10 Year	84	32,06
	11 Year +	88	33,59
School Level	Primary	101	38,55
	Secondary	77	29,39
	High	84	32,06
Toplam		280	100

Of the teachers forming the sample, 112 (42.75%) are female and 150 (57.25%) are male. Considering the seniority of the teachers, 90 (34.35%) have 0-5 years, 84 (32.06%) 6-10 years, 88 (33.59%) 11 years and above. 101 (38.55%) of the teachers work in primary school, 77 (29.39%) in secondary school and 84 (32.06%) in high school.

Data Collection Tools and Procedure

During the data collection process, two different scales were used to determine the relationship between teachers' administrative spitefulness perceptions and their organizational happiness. The first of the scales used in data collection was the Administrative Spitefulness Scale, which was developed by Elma (2019) and consists of 26 items, in order to determine the level of vindictiveness of managers. The total variance rate explained by the one-dimensional scale was determined as 67.78. The Cronbach's Alpha values of the total scores of the scale were .98, the Guttman value was .95, and the Spearman Brown value was .95. These values were accepted as proof that the "Administrational Spitefulness Scale" can be a valid and reliable measure in measuring teachers' perceptions of administrators' spites. In addition, according to the results obtained from the data collected within the scope of this study, the Cronbach Alpha value of the scale was determined as .94. The second data collection tool used in the study is the "Organizational Happiness Scale for Teachers" developed by Korkut (2019). The scale consists of 33 (thirty-three) items and six dimensions. As a result of the reliability analysis carried out by the researcher, the Cronbach's Alpha coefficient for the whole scale was found to be .9

Data Analysis

Since 9 of the 271 data collection tools collected from the sample of the study were considered to be incomplete and/or incorrect, 262 data were included in the evaluation. After this stage, the kurtosis and skewness values of the expressions belonging to the scales were examined for the normality condition and it was determined that these values were within the limits, and it was decided that the normal distribution condition was met (Tabachnick & Fidel, 2003). In the study, t-test and one-way analysis of variance were conducted, which is suitable for the demographic characteristics of teachers' perceptions of administrative spitefulness and organizational happiness, according to the number of groups. Pearson correlation analysis was used to determine the relationship between the variables. In addition, with simple regression analysis, the percentage of teachers' perception of administrative spitefulness explaining their organizational happiness was tried to be determined.

Findings

In the study, the organizational vindictiveness of the administrators and the organizational happiness perceptions of the teachers were examined according to the gender of the teachers, the school level they work at and their professional seniority.

Findings Regarding the Organizational Spitefulness Perception Levels of Managers and Organizational Happiness of Teachers

In the study, first of all, administrators' organizational vindictiveness and teachers' organizational happiness perception levels were examined and the results of the analyzes are given in Table 2.

Table 2. *Managers' organizational spitefulness and teachers' organizational happiness perception levels*

Scale	Dimensions	Number of Items	n	\bar{X}	Sd
Organizational Spitefulness	Total	26	262	2.85	0.32
	Teaching Profession	7	262	3.18	0.41
	Attitudes and Behaviors of Managers	6	262	3.25	0.42
	Colleague Relations	7	262	2.91	0.38
	Working Conditions	5	262	2.95	0.40
	Classroom Management	5	262	3.82	0.46
	Positive Personality	3	262	3.32	0.43
Organizational Happiness	Total	33	262	3.21	0.41

When the averages of the organizational vindictiveness of the administrators were examined according to the opinions of the teachers, it was determined that the scores were ($\bar{x}=2.85$) and moderate.

When the averages of teachers' organizational happiness are examined in Table 2, it is seen that the score is ($\bar{X}=3.21$) and moderate. When the organizational happiness of the teachers is examined in terms of sub-dimensions, their scores in the teaching profession sub-dimension ($\bar{X}=3.18$) and medium level, the scores in the attitudes and behaviors of the administrators sub-dimension ($\bar{X}=3.25$) and medium level, the scores in the colleague relations sub-dimension ($\bar{X}=2.91$) and It was determined that the scores were low in the sub-dimension of working conditions ($\bar{X}=2.95$) and low, in the classroom management sub-dimension ($\bar{X}=3.82$) and high-level, in the positive personality sub-dimension ($\bar{X}=3.32$) and moderate.

Findings Related to Examining Organizational Spitefulness of Managers and Organizational Happiness of Teachers in Terms of Various Variables

Findings by Gender Variable

The homogeneity of variance was tested to determine whether the organizational vindictiveness of the administrators and the organizational happiness

of the teachers differ statistically in terms of their gender variable. Homogeneity of variances test results; for the gender variable ($\text{Levene}=.027$; $p=.795$). According to these results, it can be stated that the variances are homogeneous. After this stage, independent groups t-test was performed and the results of the analysis are given in Table 3.

Table 3. *Analysis of managers' organizational spitefulness and teachers' organizational happiness by gender variable (t-test)*

Scale	Variable	Groups	n	\bar{X}	Sd	t	df	p
Organizational Spitefulness	Gender	Female	112	2.77	0.49	-.89	260	.47
		Male	150	2.87	0.42			
Organizational Happiness	Gender	Female	112	3.18	0.58	-.81	260	.38
		Male	168	3.25	0.61			

* $p < .05$

As seen in Table 3, teachers' perceptions of organizational vindictiveness do not show a statistically significant difference according to the gender variable ($p>.05$). In this context, teachers have similar perceptions of organizational vindictiveness according to their gender. Teachers' organizational happiness does not differ according to the gender variable ($p>.05$). In this context, teachers have similar perceptions of happiness towards the teaching profession according to their gender.

Findings by School Level and Professional Seniority Variable

The homogeneity of variance was tested to determine whether the organizational vindictiveness of the administrators showed a statistically significant difference in terms of the school level and professional seniority variables of the teachers. Homogeneity of variances test results; for the variable of school level worked ($\text{Levene}=.045$; $p=.695$) and for the variable of professional seniority ($\text{Levene}=.039$; $p=.677$). According to these results, it can be stated that the variances are homogeneous. After this stage, ANOVA test was performed and the results of the analysis are given in Table 4.

Table 4. *Analysis of administrators' organizational spitefulness by the variables of teachers' school level and professional seniority (ANOVA)*

Variable	n	\bar{X}	sd	V.K.	K.T.	Df	K.O.	F	p	Difference
School Level Served	Primary school (1)	101	2.89	0.61	Between Groups	0.59	3	0.44		1-3
	Secondary school (2)	77	2.85	0.58	In Groups	270.54	259	0.51	1.45 .04*	2-3
	High school (3)	84	2.70	0.52	Total	271.55				

	Primary school (1)	90	2.86	0.65	Between Groups	.80	3	0.48		
Professional Seniority	Secondary school (2)	84	2.84	0.69	In Groups	599.03	259	0.54	.92	.36
	High school (3)	88	2.77	0.71	Total		602.27			

* $p < .05$

When Table 4 is examined, it was determined that the organizational vindictiveness of the administrators differed significantly according to the school level variable of the teachers ($F=1.45$; $p=.04 < .05$). Accordingly, the level of perception of the organizational vindictiveness of the administrators, the scores of the teachers working in primary school ($\bar{X}=2.89$) and the teachers working in secondary school ($\bar{X}=2.85$) are higher than the teachers working in high school ($\bar{X}=2.70$). It was determined that the organizational vindictiveness of the administrators did not show a statistically significant difference according to the professional seniority variable of the teachers ($F=.92$; $p=.36 > .05$). In this context, the organizational vindictiveness of the administrators is similar according to the school level of the teachers.

The homogeneity of variance was tested in order to determine whether the Organizational Happiness of the teachers showed a statistically significant difference in terms of the school level and professional seniority variables. Homogeneity of variances test results; for the variable of school level (Levene=.051; $p=.775$) and for the variable of professional seniority (Levene=.033; $p=.768$). According to these results, it can be stated that the variances are homogeneous. After this stage, ANOVA test was performed and the results of the analysis are given in Table 5.

Table 5. Analysis of teachers' organizational happiness by variables of school level and professional seniority (ANOVA)

Variable		n	\bar{X}	Sd	V.K.	K.T.	Df	K.O.	F	p	Difference
School Level Served	Primary school (1)	95	3.27	0.71	Between Groups	2.58	3	1.45			1-2
	Secondary school (2)	105	3.19	0.50	In Groups	238.17	259	0.91	1.83	.00*	
	High school (3)	80	3.14	0.46	Total	241.80					1-3
Professional Seniority	Primary school (1)	98	3.10	0.75	Between Groups	3.13	3	1.33			3-1
	Secondary school (2)	88	3.23	0.72	In Groups	251.41	259	0.84	3.32	.00*	
	High school (3)	94	3.35	0.74	Total	257.19					

* $p < .05$

When Table 5 is examined, the organizational happiness of the teachers showed a significant difference according to the school level variable ($F=1.83$; $p=.00<.05$). Accordingly, the organizational happiness of the teachers working at the primary school level ($\bar{X}=3.27$) is higher than the teachers working in the secondary school ($\bar{X}=3.19$) and the teachers working in the high school ($\bar{X}=3.14$).

The organizational happiness of the teachers showed a significant difference according to the variable of professional seniority ($F=3.32$; $p=.00<.05$). According to this, the perception of happiness of teachers with 11 years and above professional seniority ($\bar{X}=3.35$) is higher than teachers with 0-5 years seniority ($\bar{X}=3.10$).

Findings Regarding the Relationship Between the Organizational Spitefulness of Administrators and the Perception of Organizational Happiness of Teachers

Pearson's correlation analysis was performed in order to determine the relationships between administrators' organizational vindictiveness and teachers' organizational happiness and its sub-dimensions, and the results of the analysis are shown in Table 6.

Table 6. *Analysis of the relationships between managers' organizational spitefulness and teachers' organizational happiness (Pearson's Correlation Analysis)*

Scale and Dimensions	Organizational Spitefulness
Organizational Happiness	-.64*
Teaching Profession	-.65*
Attitudes and Behaviors of Managers	-.72*
Colleague Relations	-.62*
Working Conditions	-.61*
Classroom Management	-.59*
Positive Personality	-.68*

* $p < .05$

When Table 6 is examined, it has been determined that there are negative and significant relationships at different levels between the organizational vindictiveness of the administrators and the organizational happiness of the teachers and its sub-dimensions. In this context, it can be stated that there is a moderately negative and significant relationship between the organizational vindictiveness of the administrators and the organizational happiness of the teachers.

In the findings, it was seen that there was a high level of negative significant relationship with the organizational vindictiveness of the administrators,

the attitudes and behaviors of the managers, which is the organizational happiness sub-dimension of the teachers, and a moderately negative significant relationship with all other sub-dimensions.

It is aimed to determine whether teachers' perceptions of organizational vindictiveness of administrators significantly predict their organizational happiness. In this context, a simple regression analysis was conducted in order to determine how much the organizational vindictiveness of the administrators explained the organizational happiness of the teachers.

The results regarding the level of organizational vindictiveness of administrators explaining the happiness of teachers are given in Table 7.

Table 7. *A simple regression analysis for the predictions of organizational spitefulness of managers and organizational happiness of teachers*

Predicted Variable	Organizational Happiness					
Predictive Variable	B	ShB	β	t	p	r
Organizational Spitefulness	-.66	.044	-.64	11.44	.00	-.64
	$R = -.64$			$R^2 = .41$		
	$F=342.25$			$p = .00$		

When the correlation values between the predictive variable organizational greed and the predicted variable organizational happiness are examined in Table 7, a negative and moderate relationship ($r = -.64$) was determined between organizational greed and organizational happiness. Based on this finding, it can be stated that the perception of organizational vindictiveness is a significant predictor of organizational happiness. It is possible to say that the organizational vindictiveness of the administrators explains 41% of the total variance of the teachers' organizational happiness.

Conclusion and Discussion

In this study, how teachers perceive the spitefulness behaviors of their administrators and their happiness at school were examined. In the findings obtained in this context, according to the perceptions of the teachers participating in the research, it was observed that the school administrators in the schools they work in generally exhibit low level of spiteful behaviours. It can be stated that the school administrators in the schools where the sampled teachers work do not show much spiteful behavior, on the contrary, they have a more forgiving attitude. Supporting this research finding, Elma (2019) reported in his study that teachers perceived school administrators' administrative spitefulness at a low level. As seen that, it can be interpreted that the school administrators working in the schools where the sampled teachers work are in a forgiving attitude.

The finding that the perceptions of the teachers participating in the research regarding the administrative spiteful behaviors of school administrators are similar between male and female teachers is supported by some studies in the literature (Bracht & Zylbersztein, 2018; Elma, 2019; Gegekoğlu, 2021; Varol Bilgin, 2021). In addition, some studies in the related literature show that men display more spiteful behaviors was found (Anacleto Almeida, 2014; Göksu, 2018; Marcus, Zeigler-Hill, Mercer, & Norris, 2014; Rodgers & Dahling, 2017; Whisman & Friedman, 1998; Yilmaz, 2019). As seen in these studies, it is seen that the administrative spiteful behavior of school administrators varies according to the situation of the teachers taken into the sample. Among the reasons for the emergence of such different findings in the literature, the personality characteristics of the school administrator can be counted.

In another finding of the study, it was observed that teachers' perceptions of school administrators' managerial spiteful behaviors did not change according to their seniority. This finding is in line with the research findings of Elma (2019). Similarly, in some studies in the literature, it is stated that spiteful behaviors decrease as age increases (Anacleto Almeida, 2014; Marcus, et al., 2014; Yilmaz, 2019). According to the findings of this research, it is understood that the duration of seniority is not a variable that affects the teachers' perception of spiteful behaviors of their administrators.

A significant difference was detected among teachers' perceptions related to administrative spitefulness according to school type. The spiteful behavior of the school administrators of the teachers working in primary and secondary schools at a moderate level; It was seen that teachers working in high schools perceived it at a low level. According to this finding, it can be said that school administrators working in high schools exhibit more forgiving behaviors in school affairs than school administrators working in primary and secondary schools. Elma (2019), on the other hand, stated in his research that school administrators perceive spite behaviors at a higher level than preschool teachers, classroom teachers and branch teachers working in secondary schools compared to teachers in high schools. In this study, on the contrary, it can be said that primary and secondary school teachers describe school administrators as more spitefulness.

It has been observed that the organizational happiness perceptions of the teachers participating in the research are at a moderate level. This finding coincides with the findings of the research conducted by Düzgün (2016) and Gürbüz (2021) in the literature. In addition, when the findings were examined in terms of happiness sub-dimensions, it was seen that the lowest averages were in the dimensions of working conditions and colleague relations. This finding indicates that the teachers in the research sample are not very satisfied with the working conditions and friendship relations in their schools. In terms

of their general happiness, it can be said that teachers are generally happy in the schools they work in. According to some research findings in the literature, it has been determined that teachers' perceptions of general happiness and organizational happiness are high (Arslan, 2018; Akın & Şentürk, 2012; Bayraktar & Girgin, 2020; Bulut, 2015; Çetin, 2019; Demircan, 2019; Duman, 2014; Duran, 2016; Göral, 2013; Kabal, 2019; Korkut, 2019; Serter, 2019; Özgenel and Bozkurt, 2020; Öztürk, 2015; Tosten, Avcı and Şahin, 2018; Uğur, 2019). In this context, according to the findings of this research conducted in the sample of Turkey, it can be stated that teachers are generally happy in the schools they work in and they are satisfied with the teaching profession.

In the findings of the study, it was seen that the level of happiness perceived by the teachers in terms of their gender did not change. Accordingly, it can be said that the happiness perceptions of male and female teachers participating in the research are similar. In addition, there are findings supporting this research in the literature (Bayraktar & Girgin, 2020; Bekil, 2019; Bulut, 2015; Crossman & Harris, 2006; Demir & Murat, 2017; Diener & Ryan, 2009; Duman, 2014; Duran, 2016; Konan & Taşdemir, 2019; Korkut, 2019; Özgenel & Bozkurt, 2020). When considered in the context of the schools where they work, it can be expected that the perceptions of organizational happiness will be similar since male and female teachers work under similar opportunities and conditions. This finding suggests that teachers' perceptions of happiness are not related to their gender, but rather to their own personality traits and experiences.

In addition to these research findings, some research findings in the literature indicate that the happiness level of men is higher than women (Akın & Şentürk, 2012; Düzgün, 2016; Corra, Carter, Carter, & Knox, 2009; Gürbüz, 2021; Korkut, 2019; Lucas et al. Gohm, 2000; Tümkaya, 2011), and in some researches women have higher happiness levels than men (Blanchflower & Oswald, 2004; Brouskeli, Kaltsi, & Loumakou, 2018; Bulut, 2015; Kangal, 2013; Mocosoglu & Kaya, 2010). In this study, it was observed that gender was not a differentiating variable in terms of happiness perception.

In terms of seniority of teachers, it can be said that teachers with 11 or more years of working time are happier in their schools than teachers with fewer years of working time. Düzgün (2016) and Korkut (2019) stated in their research that the happiest teachers are those with a seniority of 21 years or more. This finding is in line with the research findings. In addition, in the related literature, it is stated that teachers in their first year of teaching profession are happier (Bayraktar & Girgin, 2020; Bulut, 2015) and they have a similar level of happiness in terms of seniority are also included in the studies (Crossman & Harris, 2006; Konan & Taşdemir, 2019; Özdemir & Winter, 2019; Özgenel & Bozkurt, 2020). It is thought that the differences in these findings are due to the teachers included in the sample. In this study, it was understood that teachers with more seniority were happier than teachers with less seniority.

In another finding of the study, a significant difference was also detected among teachers' happiness levels according to school type. While the perception of happiness of the teachers participating in the research and working in primary schools was at a moderate level, it was observed that the teachers working in secondary schools and high schools were at a low level. It is seen that teachers working in primary schools are happier than others. Aelterman et al. (2007), Bulut (2015), Özgenel and Bozkurt (2020), Bayraktar and Girgin (2020), Moçoşoğlu and Kaya (2018), Tösten et al. (2018) in their research, as seen in these research findings, of teachers were happier working in primary schools. In some studies in the literature, it has been determined that teachers working in private schools are happier than teachers working in public schools (Crossman & Harris, 2006; Gürbüz, 2021). In addition, in the study of Bulut (2015) in which he looks at high schools, the teachers' working in Science High Schools; Korkut (2019), on the other hand, reported that classroom teachers are happier than branch teachers. On the contrary, in some studies, it is seen that teachers' perceptions of happiness do not change according to the type of school (Bekil, 2019; Konan & Taşdemir, 2019; Uğur, 2019). Finally, in these research findings, it is understood that primary school teachers are happier than general knowledge teachers working in secondary schools and high schools.

In this study, it was observed that there was a moderate and negative relationship between the perceptions of the teachers included in the sample regarding the managerial spiteful behaviors of the school principals in the management processes and their organizational happiness. It was observed that there is a high level negative significant relationship with the managerial spiteful behaviors of the administrators and the attitudes and behaviors of the managers, which is the organizational happiness sub-dimension of the teachers. As can be understood from this finding, it can be said that managerial spitefulness attitudes and behaviors will reduce teachers' happiness. In line with this finding, it can be interpreted that the spiteful behaviors of the school administrators in the practices in the management processes of the schools where they work will reduce their happiness in the school. At the same time, this research reveals that the spiteful behaviors of school administrators is a significant predictor of teachers' happiness perceptions and that this is negative. Findings indicate that school principals displaying a spiteful attitude instead of forgiving teachers in their behaviors and practices will reduce teachers' happiness in school processes. In this study, it is understood that spiteful behaviors create negative feelings on teachers. From this point of view, it can be said that the forgiving attitude of school administrators in their behaviors and practices in the school's management processes will increase the happiness of their teachers. In this context, in this study, in which the relationship between school administrators' managerial spiteful behaviors and

their happiness, according to teachers' perceptions, was examined, it was seen that spitefulness reduces happiness at a moderate level.

Recommendations

When the relevant literature was examined, no studies were found examining the relationship between the spiteful behavior of the school principal and the organizational happiness of the teachers. In this sense, there is a need for more research describing the relationship between the spiteful behavior of the school principal and the organizational happiness of the teachers. In addition, qualitative research should be conducted in order to reveal what the vindictive behaviors of school administrators are in general and the main reasons for these behaviors. In addition, it can be suggested to conduct mixed-patterned and qualitative studies in order to better understand the vindictive behavior of school administrators and to understand in which situations teachers are more happy in the processes at school.

Ethical

In this study, all rules stated to be followed within the scope of "Higher Education Institutions Scientific Research and Publication Ethics Directive" were followed. Ethical Review Board Name: Inonu University Ethics Committee. Date of Ethics Evaluation Decision: 14.04.2022 Ethics Assessment Document Issue Number: GO 2022/8-3

Conflict of Interest

No potential conflict of interest was reported by the authors.

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Chapter 4

IDEOLOGICAL AND POLITICAL ASPECTS OF THE VISUAL IMAGES: A SEMIOTIC ANALYSIS OF ELT TEXTBOOK COVERS

Serda GÜZEL¹



¹ Serda GÜZEL, Dr.Öğretim Üyesi, Arel Üniversitesi, Fen Edebiyat Fakültesi,
Mütercim ve Tercümanlık Bölümü, ORCID:0000-0001-5212-9891

Introduction

The image in the textbooks and textbook covers have many benefits to the EFL setting. English is an international language and it is used in Expanding and Outer Circle countries. Based on this, English plays a significant role in postmodern world in terms of ELT education. Based on this, English Language textbooks convey ideological oriented and implied social discourses. In this regard, English Language textbooks are considered as learning sources and they construct learning and teaching process. Learners' mental representation is shaped and constructed by means of globally written ELT textbooks and English textbooks regulate social control in ELT setting. They convey new information to the learners and readers. Textbooks have covers and these covers reflect content, function and structure of the textbooks. In this study, the researcher tries to analyze visual components in the textbooks' cover. The multimodel elements are taken from the two selected globally written ELT textbooks. These are Headway (2019) and Traveller (2009). This study tries to describe the multimodel images that exist in the selected ELT textbook covers. This study focuses on visual data of the two selected textbook covers. The qualitative method is used in this study in order to explore visual components and thematic features of two selected textbooks covers. Rose's (2016) compositional interpretation and visual discourse analysis are used in this article in order to reveal dominant ideology in selected textbook covers. This study tries to explore ideological as well as political representations used in that textbooks' covers. This study suggests that cover images and visual data used in the textbook covers play a significant role for meaning making practices in learning process. To conclude, the visual images of selected textbook covers transmit Inner Circle countries' ideological components, social norms and discourses implicitly and explicitly. This study focuses on ELT textbook cover visual images in order to reveal their pedagogical functions and purposes. The data of the study two selected ELT textbook cover images and the findings suggest that gender bias and stereotypes. Anglo American supremacy is visually portrayed in the textbook cover. It can be state that image structure of textbook cover establishes dominant ideology and power by means of visual image policy. As it is mentioned before, Allwright (2005) describes that the visual images are integral parts of language textbooks and visual images are consired as universal language. Visual images frequently transmit the same or equivalent meaning for Inner, Outer and Expanding Circle countries for native and non native speakers. In post modern period, visual world is an important and effective teaching and learning intruments for language teachers and learners. In other words, Sharifian (2009) states that illustrations and images play significant role for story books and textbooks. As it is known, Lund (2010) declares that storybooks are produced for young learners but textbooks are produced for all levels of education and age. Zimmerman (2014) states

that the content function and the visual images of the textbook guide the learners during the learning process. Allwright (2005) states that visual images are widely used in EFL context. Zimmerman (2014) states that visual materials activate language learning in classrooms. Haiyan (2018) declares that they are considered as communication tools because students establish their background information during classroom activities by means of visual materials. According to Ledin and Machin (2018) different places, characters, setting are visually portrayed in EFL Textbooks. This provides that EFL learners can understand the target culture, language, policy, ideology and worldview by means of visual images in EFL textbooks. Gray (2002) states that socio cultural and socio political representations in visual images in EFL textbooks play important role for EFL learners. This points that these political and ideological, cultural representations shape and reshape learners' values and judgments. It can be noted here, Gray (2002) states that ELT/ EFL instructional materials use visual images in order to achieve pedagogical purposes in teaching and learning process. It is accepted that visual images in textbooks, especially in EFL context are able to activate EFL learners' interests and they encourage them to learn new language, new cultures, new perspectives and new point of view. Gilmore (2020) states that visual images in instructional materials construct learners' attention, and background knowledge and they try to reduce cognitive load for example they prepare students for task, duty, exercises, and pedagogical activities. They motivate learners' learning process. According to Gray (2002) visual images in EFL textbooks play motivational role in EFL context. As it is mentioned before, according to Gray (2002) visual images in EFL context, can be considered as "universal stimuli" because students can regulate themselves in language learning process by means of attractive and explicit instructional materials.

Goldstein (2009) states that students' level of cognitive processing are shaped or reshaped and constructed by means of space, line, shape and color. It can be stated that, visual images in EFL textbooks help students' learning style and or cognitive process in terms of language structures, functions, situations and vocabulary in learning process. In this sense, Benegas (2010) states that visual images are considered as an essential educational function in EFL textbooks and they play significant instructional role in language learning context. Similarly, this study focuses on the intended meanings of textbook cover images in order to explore characteristics of cover images, as well as their educational functions.

In this regard, this study uses Rose's (2016) compositional interpretation (2016) and visual discourse in order to explore ideological, political and pedagogical purposes of two selected textbook cover images. This study points out that non human images are visually omitted in two selected textbook cover images, animals and tropical regions are not visually seen in two selected

textbook cover images. The human images are visually depicted in the cover. The two human images are visually seen as adult. This indicates that the two selected textbooks are produced and designed for adult learners. Regarding gender bias and stereotypes, in Headway textbook cover image, the female human images are visually omitted and this creates gender bias.

In Traveller, the human image is visually portrayed in dark setting. In Headway cover image, the male human image is portrayed from a frontal eye level and full color saturation images are used when he is depicted in the textbook cover. This mentions that he represents authentic meaning in real life setting but in Traveller textbook cover image human image is not portrayed as full color saturation. This kind of image or visual depictions represent lowered level of authentic image representation. Regarding contextualization, two selected textbook images have no clear background. Regarding gender bias and stereotypes the human male subject in Headway textbook cover image is represented full color saturation and there is no human female image in the textbook cover. In other words, human female images are visually omitted in Headway textbook cover images this creates gender bias and stereotypes.

This study reveals that the two selected textbook cover image have authentic meaning in real life setting. They use informative and decorative information. On the other hand, this study explores that Anglo American supremacy and dominant ideology are coconstructed by means of textbook cover images. Expanding Circle Countries' human images (female, male, children) and their realities, and custom are visually omitted in two selected textbooks cover images. This establishes dominant ideology and power in terms of race, gender, culture and history.

Cunningsworth (1995) states that The ELT/EFL textbooks are seen as important elements for teaching and learning process. This study tries to analyze semiotic discourse analysis of visual images of globally written ELT textbooks.) Jiang (2000) indicates that Visual images in textbooks facilitate learning process. Based on this, visual images represent cultural, political and ideological issues and they interact with the target readers or learners. In this way, Emmison and Smith (2000) declare that they make the book more effective. Based on this, Jenkins (2007) mentions that globally produced EFL textbooks include values, norms cultural and political aspects of Inner Circle societies. According to Jenkins (2007), Anglo American cultural and political norms are conveyed by means of globally written ELT/ EFL textbooks. Based on this, Kachru (1992) implies that the visual image of ELT/EFL textbooks cover play important role in ELF setting because they reflect Inner Circle Countries' values and beliefs. Ellis (2003) states that visual images in EFL education materials and documents carry multilayered meanings and specific ideology and they act as political agenda in EFL setting. This study focuses on multimodal discourse analysis in order to explore dominant ideology and

dominant political agenda in selected textbooks cover. In this sense, van dijk (1997) points out that ideology contains ideas, social norms and particular viewpoint. As van dijk (1997) affirms ideology is seen as set of ideas and beliefs and these ideas and beliefs systems are shared by particular social groups. From this perspective, Fairclough (1992) indicates that ideologies are conveyed by means of implied and explicit social discourses. This study focuses on multimodel analysis of EFL textbook covers because EFL materials are not seen as bare papers they convey particular simulation and ideas of Inner circle countries' educational and political systems. According to Weninger (2020) ELT/ EFL materials support learning and teaching process, they motivate the EFL students and they can be seen as useful guidelines for EFL learners and teachers. Based on Zeegen (2009) they contain ready made tasks and texts and language content curriculum. EFL /ELT Textbooks act as instructor, an authority and ideological norms. In this regard, according to Ellis (2003) the ideology can be seen as key word in order to understand socio political system of ELT/EFL textbooks. From this point of view, this study tries to examine dominant ideologies and political aspects by means of multimodel analysis of (visual images) that exist in the cover of ELT textbooks.

Theoretical Framework

Hurst (2004) points out that Multimodel analysis focuses on non verbal signification systems. It is based on semiotic modalities, resources and modes in communicative events. (Hurst,2014) Based on this, images convey implicit and explicit meaning. From this light, this study uses social semiotic theory in order to analze how meaning, and dominant ideology as well as political agenda are communiated and conveyed in selected ELT textbooks covers. According to Dimopoulos et, al (2003) social semiotic analysis images are semiotic modes and they reflect meaning at three steps. They are representational, interactional and compositional. Zeegen (2009) states that the representational meaning making focuses on type of people, setting and activities in the images. The interactional meaning making process focuses on the emotional relationship between audiences/ readers and represented/ reflected characters. The compositional meaning making focuses on how non verbal or non linguistic elements are composed and produced in the image area. Van Leeuwen (2001) states that these three levels deal with meaning making process and practices in the texts, and these meanings (implicit and explicit) are shaped by the socio political context, the readers' and image producers' personal, ideological and social backgrounds. Rose's compositional interpretation (2016) and visual discourse analysis are used in this article. The representations and interactions of images and image contents are analyzed by means of compositional aspects. This approach focuses on technological modes of images, the social aspects of images are ignored in this model. Rose's visual discourse

analysis (2016) focuses on the social cultural aspects of the image. According to Kress and Van Leeuwen (2020) visual images, non verbal elements are seen as discourse because they convey particular visible and invisible ideologies.

According to van Leeuwen (2001) the meaning of images depends upon other images this is called intertextuality. Rose (2016) declares that discourse analysis focuses on images and it deals with their social and political meanings as well as their power and knowledge relationship in the text. Rose (2016) divided discourse analysis into two categories. These are called Discourse Analysis and Discourse Analysis II. Rose's (2016) Discourse Analysis I focuses on types of discourses contrusted and shaped by images and it deals with power and knowledge relationship in the text. According to Rose's model (2016) Discourse Analysis II focuses on institutional components or practices of the discourse. This study uses Rose's (2016) Discourse Analysis I in order to explore dominant ideology and dominant social and political aspects in the selected two textbook cover images. Rose's discourse analysis (2016) is based on Foucault's (1972) concept of discourse. According to Foucault (1972) discourse is constructed by reicever's practices and opinions. In line with this, Faucault (1972) declares that discourse is seen as power, because it reproduces and creates social effects social values and material effects.

Image Content

Berger (1972) states that image content includes characters, setting and activities in the images. Image content reflects exclusion/ inclusion majority and minority power positions visibiliy and invisibiliy in the images. These features play important role for audiences/ readers in terms of attention.

Color

Royce (2007) states that the colour is an important entities for objects, images and emotions and feelings. Various shades of colour and purity of color reflect lightness and darkness of the colour. In this study, the colours used in the images are examined bacause colors represent moods, emotions, distance.

Spatial organization:

According to Berger (1972) connection and disconnection are constructed by means of vectors. Based on Berger (1972) lines and gestures are important elements for the visual images. Shot distance, image contents (rhythm), internal and external perspectives, guided and unguided view (focalization) are important elements for the spatial organization for the images. According to Rose (2016) the spatial organization constructs the relationship between the audience and the image. This study analyzed connection and disconnection,

distance point of view and focalization in order to explore hidden meaning and ideologies of cover images of the selected textbooks.

Expressive Content

According to Hill (1990) the components and atmosphere that the image construct can be examined by means of expressive content. Expressive content realizes and produces meaning/ multiple meanings in the images.

Institutional Location, Targeted Audiences and Potential Impacts

This part focuses on institutional location and its impacts on the target reader or audiences. According to Wright and Haleem (1991) social and political as well as ideological oriented context play an important role for meaning making process. In this study, the selected EFL textbooks cover images are analyzed in order to explore dominant ideology and power in the cover images. According to Wright and Haleem (1991) the textbook cover images have institutional power and ideology. Because the cover images are part of the EFL textbooks and they are published by Inner Circle countries' institution. They are used in EFL learning and teaching process. Based on this, according to Kachru (1992) they are produced for Expanding Circle Countries' EFL learners and teachers and they have social political and ideological impacts on the EFL learners and teachers in learning and teaching process.

Power and Knowledge

Based on Foucault (1972) there is a strong relationship between power and knowledge. Discourses are produced in order to establish power. According to Foucault (1972) knowledge is based on power. Power produces and shapes knowledge. The relationship between power and knowledge construct rules and regulations in the societies. Power exists everywhere and it establishes all types of relationships and social and daily life functions. Gender discourses and social and political discourses can be seen in the textbook cover images.

Research Questions

How social, ideological and political oriented visual images are employed in the cover of selected EFL English Textbooks?

Object Of The Study

This study tries to analyze visual images that exist in the cover of selected EFL English textbooks. By doing this, this study tries to explore the EFL textbooks' writers and publishers' ideological, political and social perspectives.

Research Method

Qualitative method is used in this study in order to explore sociopolitical and ideological issues that reflected in the cover of two selected English Textbooks for pre intermediate EFL learners. Descriptive technique is used while analyzing the selective ELT textbooks. The stage pre intermediate level and two publications MM Publications and Oxford Publications are analyzed in this study. This study uses social semiotic approach in order to compare and contrast two selected textbook cover images. The textbook cover images are taken from the websites. The cover images are analyzed according to compositional factors that are different in the two selected textbook cover images. In this regard, social and semiotic implications are applied in order to explore compositional features. As it is mentioned before, Rose's (2016) compositional interpretation and discourse analysis I are used in this study. The compositional interpretation is used in order to explore compositional differences and Rose's (2006) Discourse Analysis I is used to explore hidden social, political and ideological issues represented in the visual image composition. The two selected globally written EFL Textbooks are Traveller (MM Publications/ Pre-Intermediate Level and publication date was 2009. Headway (Oxford University Press / Pre-Intermediate Level Publication date was 2019. These globally written ELT textbooks are selected as the data of the study because they have wide scope in EFL context.

Findings and Discussion

A Semiotic Comparison Of Two Selected Textbooks

The Traveller published in 2009, Headway (5th edition) published in 2019. Based on the publication date, Traveller reflects old curriculum and the Headway reflects new curriculum in terms of EFL learning and teaching process. The Cover of the books reflects content of the book. Two selected cover images reflect what is inside in the book by means of verbal and visual images.

Character and Setting Focused Contents

Two selected globally written textbooks reflect characters, two textbooks focus on only one character. As seen in the samples, the characters are foregrounded in the images. In Headway, ideology of sport (riding a bike) is foregrounded in the cover. In Headway, the character is more realistic than in Traveller textbook. The character depicted in the Traveller is less realistic and smaller than Headway.

There is a difference between two selected textbook images in terms of setting. The Headway does not have detailed setting. When we look at the back of the character, the setting is not clear, only shadow of the people can be

seen in the cover. Traveller Texbook has detailed setting rather than Headway. The character sitting in the cafe or balcony and she looks at the city building in other words skyscraper. The skyscraper reflects Anglo American modern city life. In Headway, the young male depicted in big size and he has happy face expressions. His friendly facial expression attracts readers/ learners. His dress code implies that he is a student. This suggests that he shares the the same social role and identity and status with the target readers. In this sense, Headway cover image can represent school context.

Focus on the Character Connections

In this part, gestures, eye lines, characters' gaze, the distance between the characters and the shot distance are analyzed in the textbook cover. In the headway textbook cover image, the male character is at close distance, he is involved in the sport activity (riding a bike) and he is looking toward the book and this technique indicates that there is a strong connection between readers and the character. In the traveller cover image the character is isolated, the character does not involve any social activities such as playing tennis, riding bike or reading a book, the character is sitting and she is looking at the huge city buildings. The character is not looking or approaching to the reader. We see her back. This suggests disconnection. This way of position indicates that there is a lack of communication between the reader and the character. Shot distance is another important feature in the cover design in order to understand connection between the readers and characters. The Headway cover image is nearer in other words closer and clearer to the readers than the Traveller cover image. This points out that the Headway cover image establishes close and intimate connection to the target readers. Based on this, the character connection constructs meaning making process because close and intimate connection maintains the close relationship between the characters and the readers (in EFL context, teachers and students).

The Use Of Color

Color is a significant semiotic feature and it establishes emotions, feelings. It represents objects and it determines the objects' realistic or unrealistic forms. Based on this, it produces explicit and implicit meaning. If we compare and contrast two selected textbook in terms of semiotic element, color we can see that Headway textbook cover contains orange color. Orange is the dominant color in Headway cover image. Orange represents positive and cheerful energy. The Headway cover design includes bright and vibrant orange color and this usage suggests energy and happiness and youthfullness. It represents creativity and it uplifts people's moods. In this sense, when EFL students look at cover book design of Headway they are motivated and they think that learning English is an easy task.

The character's sweatshirt is brown. Brown represents feelings of hopelessness. It creates opposition in terms of color. The usage of orange (associated with optimism and energy).The usage of brown (associated with hopelessness) and it shapes and creates opposition in terms of color. We can see different colors in Headway coverbook image, character features (blond hair) clothing (green tone hat and black jeans) . These color features establish meaning making process in terms of color. Purple is dominant color in Traveller cover book image. In Anglo American Culture, purple represents honour and courage and it represents bravery. In this sense, this global written English Textbook is produced in Inner Circle Country (Countries). Based on Anglo American social and political and cultural context, Purple represents their dominant ideology in terms of English Language Education. White and black are used in the cover. This establishes binary opposition in terms of color. The character is depicted in dark (Black setting). Black is seen as formality, powerful and prestigious. As it is mentioned before, it represents Anglo American dominant ideology. White represents simple, pure and elegance in Western culture. The verbal language in the cover design is written in white color. Based on this, the two selected cover design establishes meaning and communication by means of colour sign. It can be noted here, high saturation of colors are used in two selected textbook covers. The vibrant and highly saturated colors are used in cover images.

Picture Image

Multiple and single images within the cover image can be considered as important in terms of picture compositions. The two selected cover book image present a single image within single setting. This indicates that two selected cover books do not have multiple pictures and multiple contexts. They have same setting and same context. The two selected textbook covers do not have multiple context because multiple context creates unnatural, artificial view to the readers. In this sense, multiple context and multiple situations are visually omitted in the textbook covers. By means of single context, the readers can perceive the picture image easily. It can be noted here, simple images rather than multiple pictures and multiple settings are visually preferred in two selected textbooks' cover. In Headway cover image, the boy is depicted as visually dominant and frontal angle is used. In Traveller cover image, the character is visually blurred and darkened and it can be noted here even the character is depicted as female qualities, the character's sexual orientation is not seen clearly.

Focus on the Character

Young adult characters are the center characters in the cover images of the two selected textbooks. The characters are young. The teachers, children

or old women or men are not depicted visually in the selected cover images. Based on this, this visual depiction suggests that the textbook cover images are designed according to target learners' age group.

External And Unmediated And Mediated Point Of View

External and unmediated point of view, the point of view or focalisation are important visual elements because these features give particular viewpoint to the audiences (in this context readers). There is a difference between Headway and Traveller in terms of external and unmediated point of view and internal and mediated point of view (focalisation). In this regard, in Traveller, the cover images are depicted as external and detached viewpoint. The Cover images in Traveller have unmediated focalisation. By means of unmediated focalisation the readers focus the all elements (visual and verbal) in the textbook cover. In other words, this technique gives the reader more freedom in order to focus the all the elements in the textbook. The Headway cover has mediated viewpoints. The readers view the image in a particular way. As mentioned before, the Headway cover includes internal and mediated point of view and by means of this visual technique the readers connect with the image (visual) world.

Reflection Of Anglo American Cultural Context

The two selected images in the textbook covers represent the Anglo American culture in the visual contents. For instance, in Traveller cover image huge buildings and architecture aspects impose Anglo American and Western technological development to the target readers. Especially in Headway cover image the cultural features are visually seen. For instance, clothes code (hat, sweatshirt, jeans), resemble Anglo American Cultural context. In Headway cover image, sport activiy (riding a bike in the street) gives a glimpse of Western culture. In Headway, physical appearance of male reflects (blond hair) reflects Anglo American cultural identity. His physical appearance have traces of Anglo American community that the selected book (s) are produced. This points that globally written ELT textbooks have national preferences. As mentioned before, the two selected cover images such as dressing code, sport activity, architectural aspects of the buildings reflect Anglo American context and cultural aspects.

Political Aspects of the images

The two selected textbook cover image include ideological and political features because they represent the characters, activities and setting. Based on this, the omission and inclusion of particular gender, ethnicity, setting, geography and cultural identiy reflect anglo American Western ideology.

Gender Aspects In the Images

In Headway textbook cover image, the male is depicted as dominant character. He represents Western male supremacy. The women characters from Inner, Expanding and Outer Circle countries are visually omitted in the Headway textbook cover. Particular activities like outdoor activities are visually represented as male activities. In Headway, textbook cover image the male is riding a bike and this suggests that outdoor activities associated with males. Ideology of sport is visually associated with Western male dominant character. Because, there is no woman character seen in the textbook cover image who is riding bike, playing tennis or dancing. Headway cover image reflects indoor and outdoor activities in terms of gender specific activities. This indicates that the image of boy riding bike represents that male is seen in public places. The absence of woman image reflects that women are seen as in private places. This inclusion and absence visual image constructs gender discrimination in Headway textbook cover image. According to Jiang (2000) this shapes the ELF learners' especially EFL young learners' gender socialization. The boy is wearing gender oriented dress code. Gender oriented dress code and hair style (short hair) forces the heteronormativity and this kind of visual image can limit the EFL learners to explain themselves in different way. In Traveller textbook covers image, the character's sexual orientation is not clear and the character is visually darkened. This visual image in terms of gender oriented discourse suggests that the conventional gender roles are not foregrounded. In Traveler textbook cover image, there is no visually seen conventional female and male appearances. This visual image construct neutrality in terms of gender discourse.

Ideological and Political Aspects

Based on Rose (2016) the presence and absence (exclusion and omission) of social, cultural and religious contexts reflect ideological and political discourse in the visual images. The two selected textbook cover images exclude Outer and Expanding Circle countries' characters (social identites, cultural identities). This feature produces Western / Anglo American hegemony. The two selected textbook covers have no particular setting and have no specicic geographical regions. Nevertheless, Traveller textbook cover image reflects Western based cities (huge buildings). Hills, mountain, in other words natural background are visually omitted in two selected textbook covers. This suggests that pure, natural part of life is visually ignored, city life and capitalism are visually foregrounded in the images. In Headway, dress codes and facial structure of male character represent Anglo American cultural identy. As implied before, there is no Outer and Expanding Circle countries' characters visually depicted in the cover image. This shapes hegemony and racism in terms of cultural identy. The two textbook cover image does not represent any

religious oriented images, for example there is no religious symbols in the setting and activities. By doing this, it constructs neutrality in terms of religious context.

Conclusion

This study focuses on two selected textbook cover images. The research tries to analyze compositional differences and similarity in other words compositional aspects, ideological and political discourses of textbook cover images. The textbook cover images are analyzed in this study because textbook covers are considered as the publishers' ideological and political hidden voices. Contents and images in the textbooks related to marketing unit and textbooks designers construct their contents and images according to EFL/ELT marketing in order to establish attraction.

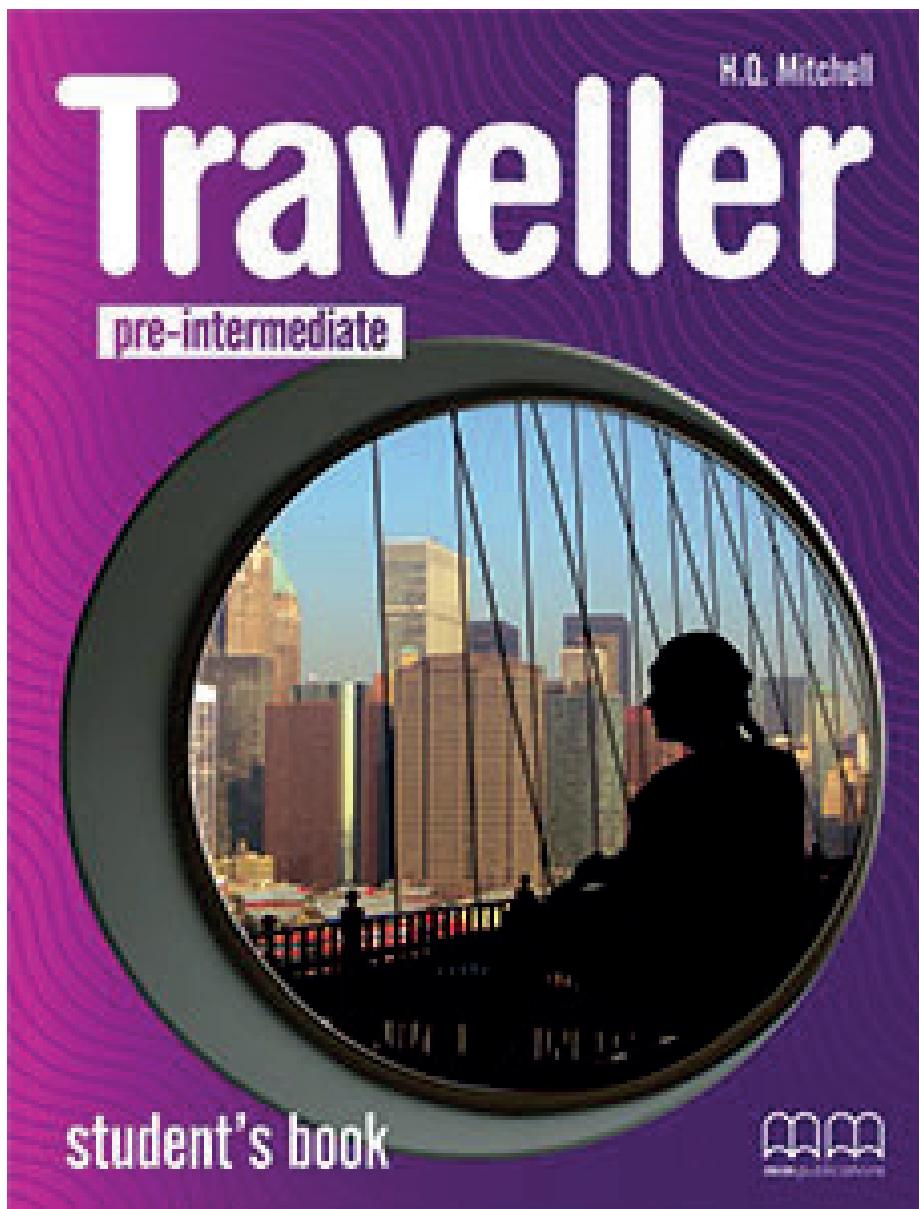
The findings indicate that the selected globally written textbook cover image have different and similar aspects in terms of compositional and other qualities of images. Characters, setting focused image and the usage of color as well as gender specific and stereotypical sport activities (ideology of sport/ riding bike) in the selected textbook cover images represent gender, cultural and social based context, in particular Anglo American Western supremacy. This study reveals that there are remarkable similarities and differences in the characters' images such as shot distance, setting details, and character relations in selected two textbook cover images. The study analyzes two globally written textbook covers in this sense the conclusion cannot be generalised to all other textbook cover images. In this study, the cover images are analyzed according to political and ideological perspectives. As a final remark, two selected textbook cover images reflect Anglo American dominant ideologies in terms of gender, dress code, sport and culture.

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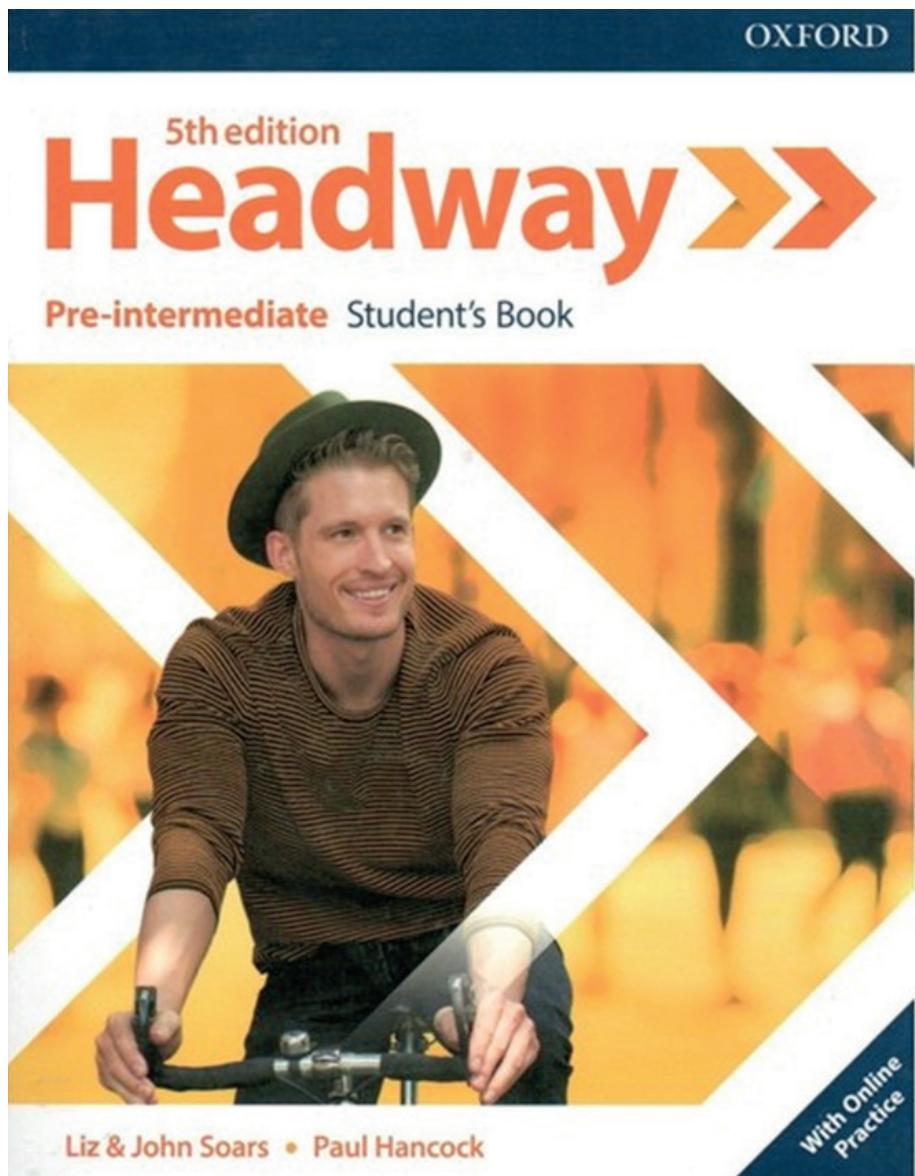
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Appendix 1: Traveller Cover Images Of English Textbook for Pre Intermediate Students



Appendix 2: Headway Cover Images Of English Textbook For Pre Intermediate Students



Chapter 5

THE USE OF GARDNER'S MULTIPLE INTELLIGENCE THEORY IN TEACHING ENGLISH TO PRESCHOOL LEARNERS

Zamire İZZETGİL¹



¹ Dr. Email: zizzetgil@hotmail.com, ORCID: 0000-0002-6208-513X.

Introduction

Since the majority of people in the modern world live in multicultural societies where multiple languages are spoken, learning foreign languages is essential and critical. Due to this, there is a greater need for people to acquire and teach foreign languages, particularly English. It has developed into a lingua franca, or, to put it another way, a medium of communication between speakers of various native tongues (Ersöz, 2010). As a result, compared to other world languages, the English language is now more prevalent and important. A strong demand for teaching the lingua franca has arisen as a result of the necessity of teaching English to preschool students around the world increasing as well. Preschoolers became a big focus of the language teachers' efforts as demand increased. This particular set of learners has its own peculiarities, internal incentives, and motives. To characterise and define them, many psychologists and researchers concentrate on their physiological, psychological, and developmental traits. They attempt to focus on the issues that make preschool learners, or more precisely, young and very young learners, different from regular ones. The term "young learners" in the literature actually refers "to children from the first year of formal schooling to 12 years of age" (Phillips, 1993, p. 5). Brumfit et al. (1991) specify the specific traits and peculiarities of young and very young learners in the following way:

- Since young students are only starting primary school, teachers have a significant opportunity to shape their expectations.
- They may be more diverse as a group than secondary or adult learners because they are more accustomed to their diverse home cultures and less accustomed to the increasing conformity that the school imposes across cultural groupings.
- They frequently exhibit a passion for learning.
- Their learning and the growth of their conceptions and ideas may be tightly related.
- They need physical movement and active stimulation for their thinking, and the closer these can be, the better.

According to Phillips (1993), the maturity of the young learners is far more significant than their age as the basis for instruction. In other words, rather than focusing on the learner's precise age, educational planning should consider the learner's level of maturity. The expectations of their parents and peers, as well as their culture, environment, and sex, can all have an impact on a young learner's maturity. In a similar vein, Scott and Ytreberg contend that some kids mature sooner than others. Some of them grow gradually, while others do so quickly. Furthermore, another significant aspect is that children of various age groups differ from one another. To illustrate, children aged

five and ten are not capable of the same things. What a child of five years old may do and what a child of ten years old may do are not identical. In addition, it cannot be claimed that at the age of five all children can reach the same level of physical and mental development, and at the age of ten all children can reach the same level of development. However, it is possible to figure out certain characteristics of young children (Scott and Ytreberg, 1990). Therefore, experts in the field state that teachers of this set of students should be aware of the individual variations and preferences of the learners and take them into consideration while teaching foreign languages to them.

Hence, in order to have knowledge and perspective about who young and very young learners are and what they can do at certain ages, it would be convenient to look at the works of some scholars such as Piaget, Vygotsky, and Bruner.

Review of Literature

Young and Very Young Learners

Jean Piaget, a Swiss psychologist, was interested in how people's thinking changed from infancy to adulthood. Piaget classified these as stages of the cognitive development of the human being. One of his significant concerns in the field was how young children interact with the environment that surrounds them and how this process impacts their mental development. According to Piaget, small children constantly engage with their environment and solve issues they face during the interaction process. He claims that a learning process takes place through taking actions to solve issues and problems (Cameron, 2001). Moreover, Piaget believes that the child is, in fact, an active participant in the growth of knowledge, which constructs the infant's own understanding. What is more important is that the child strives to make sense of the world around him or her. So, it means that he or she seeks to fit into his or her environment, or more specifically, tries to adapt to the surroundings. Another important aspect is that Piaget, in his works on the developmental model for children, talks about schemas, or, as he argues, "concepts," that work for the action of categorising. An infant starts life with a small number of sensory or motor schemas. As he or she engages with the environment around him or her, he or she gains more experience, and these schemas are modified as he or she makes sense of new experience (Somerville, 2009). Jean Piaget affirms that children's schemas are constructed through "the process of assimilation and accommodation, when going through four different stages of development" (Powell, Kalina, 2004, p. 242). "Assimilation happens when action takes place without any change to the child; accommodation involves the child adjusting to features of the environment in some way" (Cameron, 2001, p. 3). In a similar manner, McLaughlin (1992) asserts that assimilation

and accommodation are adaptive processes of behaviour; however, they become processes of thinking.

According to Piaget, a child goes through a number of stages as a result of certain fundamental changes that occur over the course of their development. He classifies these certain stages of cognitive development as sensory motor (0–2 years), pre-operational (2–7 years), concrete operational (7–11 years), and formal operational (11–adult). Piaget associates these four stages with particular ages to establish a broad framework. He believes that everyone on the globe experiences the same four phases in the exact same order. However, he points out the fact that knowing a child's age does not necessarily guarantee knowing what the kid thinks (cited in Woolfolk, 2001a, p. 31).

The stage to which young learners, or more accurately, preschool learners, belong is called the preoperational stage. The learners at this stage are capable of exploring and manipulating concrete objects through rote verbal learning and physical practise of numbers, letters, sounds, words, arithmetical computations, printing, and writing skills (Good and Brophy, 1986). In addition to this, learners in the preoperational stage develop their own language skills but still cannot grasp those of others. As Piaget declares, within this stage there is a “symbolic function,” where children begin to distinguish pictures or symbols of different objects. At this stage, this group of young and very young learners also asks all sorts of questions about everything around them (Wadsworth, 2004). Being extremely egocentric is another noteworthy characteristic of learners in the preoperational stage. They are able to observe their surroundings and other people's experiences from their own point of view. In this context, Piaget states that “egocentric” does not indicate selfishness; it simply implies that “children often assume that everyone else shares their feelings, reactions, and perspectives” (cited in Woolfolk, 2001a, pp. 32, 33).

However, at this point, it is significant to note that research carried out a few years later has demonstrated that the Swiss psychologist, Piaget, underestimated what preschool learners were capable of and that they were in fact capable of many forms of thought that he thought were too complex and difficult for them (Cameron, 2001, pp. 3–4). Furthermore, Artman et al. assert that Piaget's theory ignored the significant effects of the learners' cultural and social groups. The psychologist considered the learners on their own rather than in communication with adults or other children (Woolfolk, 2001a, p. 43).

Another significant and prominent figure in the field of child development is Russian psychologist and scholar Lev Semenovich Vygotsky. He emphasised the value of exposure to culture and social interactions with the child's environment. According to Vygotsky, human activities occur in a cultural environment and cannot be understood separately from that environment.

These social engagements do not simply affect cognitive development; they, in fact, create people's cognitive structures and thought processes. Besides, Vygotsky draws attention to the fact that interactions with adults who are older and more sophisticated in their thinking contribute to children's cognitive development; these adults could be parents or teachers (Woolfolk, 2004b). According to him, these interactions between adults and children are similar to a dance, where the adults are always in tune with the actions of the youngsters. This demonstrates that children can accomplish and comprehend much more when given adult assistance than they can on their own (Berk and Winsler, 1995). As Wood (2003) claims, Vygotsky's approach shows the noteworthy fact that when adults or more experienced peers assist them, children execute tasks, solve difficulties, or simply remember information more successfully. It is evident that Russian scholar Lev Vygotsky tries to focus on the central role of the adult in the development of the child. However, it does not mean that the adult's role should be that of an instructor delivering knowledge; on the contrary, it should be one of *scaffolding*.

Additionally, Vygotsky, in his work on the *Zone of Proximal Development*, accentuates both the significance of the hands-on experience of the children and their need for interaction with their surroundings and learning from others. The fundamental tenet of his theory is that growth and learning occur in a social context—in a world where other people are constantly interacting with the children, starting at birth. In other words, according to the Russian scholar, in a socially interconnected environment, children are active learners. Also, Lev Semenovich stresses the significance of both the social environment in the child's world and the language. He argues that language, in fact, provides the child with a new instrument and expands new opportunities for carrying out different tasks and arranging information by using words as symbols. Hence, his approach demonstrates the fact that the child first develops social skills with the aid of other people around him or her, with language helping in various ways, and eventually moves away from dependence on others to independent action and thought (Cameron, 2001). So, based on Vygotsky's approach, it would not be wrong to state that a child's successful development takes place through social interactions with others, especially parents, teachers, or more capable peers, and language helps to build this interaction.

Jerome Seymour Bruner, a reputable American psychologist, had an interest in cognitive psychology. In his works, the psychologist also focuses on the significance of culture, interpersonal relationships, or more precisely, social interaction, and language. Bruner, who has similar thoughts with Lev Vygotsky on social experience, believes that in the mental development of the child, social experience plays a key role. However, Bruner's ideas are somewhat different from Vygotsky's in that social experience is a factor in development. In his studies on human development, Bruner emphasises, like

Piaget, the influence of biology and evolution in addition to culture and social interaction (Wood, 2003).

According to Bruner, language is one of the essential instruments for the cognitive development of a child. He states that adults use language to represent the world to children and to help them solve the problems they face (Cameron, 2001). Furthermore, most of Bruner's studies show that language allows a child to develop his or her thinking and perform tasks. A key component in assisting a child in developing flexibility in thinking and creating his or her own worldviews is requiring him or her to formulate his or her thoughts in debate and providing him or her with a suitable language (Whitebread, 1999).

Bruner also works on the term *scaffolding*. The term *scaffolder* has been mentioned in relation to Vygotsky and his ZPD. In actuality, Bruner, Wood, and Ross (1976) were the ones who first used the term, drawing inspiration from Vygotsky and his work on ZPD. These scholars interpreted and applied the term to educational research. They list the following as the six main purposes of *scaffolding*:

- *recruitment*: involving the kid in an attractive and meaningful exercise;
- *reduction*: constructing and creating activities around controllable elements;
- *maintenance*: ensuring the child is focused and ready to find a solution;
- *marking*: highlighting the activity's focal points;
- *control*: lowering the activity's level of frustration;
- *demonstration*: providing a child with a model of the approach to solving a problem (cited in Holton and Clarke, 2006, p.129).

Holton and Clarke (2006) claim that cognitive scaffolding enables students to access areas they would otherwise be unable to. The teacher can provide the scaffolding necessary for the construction of new information as well as the correction of incomplete or incorrect notions by using the proper and relevant tools. They assert that the scaffolding stimulates learner activity in ZPD. According to Berk and Winsler (1995), scaffolding views the child as a building that is actively constructing itself. The social environment provides the required scaffolding or support system so that the child can advance and keep acquiring new skills. In a similar vein, Cameron (2001) states that effective scaffolding was adjusted to the demands of the child as they grew in competence. In the classroom, scaffolding can also be done through teacher-learner discussions.

Another helpful contribution Jerome Bruner made to the field of language teaching was his notion of *formats and routines*. The routine of

parents reading stories to their children is one of Bruner's most practical and important examples of a routine. The process begins from infancy onward. Parents and children together flip the pages of the big picture tale book every day or every night. As children get older, the genres of books and the parental and child roles also alter, but the format does not. Parents display and discuss the book's characters. When discussing the book's characters, parents frequently use the same words. The adult scaffolds the child's participation in reading a narrative book according to their level of development. The child can therefore anticipate what will happen next thanks to the repeated phrase. In this way, Bruner places an accent on these routines that are crucial for a child's linguistic and cognitive development. Routines that take place every day can help teachers in the language classroom. The routines might aid in the language's growth. Young children may comprehend language considerably more rapidly and effectively (Cameron, 2001).

The Theory of Multiple Intelligences

The world's inhabitants are not all the same. Every person is different. All of the people on the planet have unique physical characteristics, personalities, abilities, skills, and capacities. Some of them excel in sports, while others excel in music, and still others excel in words, arithmetic, and other subjects. Their intelligence is one feature that sets them apart from one another.

The word *intelligence* dates back to ancient Greece. Plato believed that individuals could be intelligent if they were conscious of their own ignorance. He believed that while humans could never fully comprehend the truth, they might get close by learning geometry and logic. However, later, Aristotle, a pupil of Plato, asserted that people had two significant and exceptional mental capacities: the ability to comprehend circumstances and causes rapidly and the capacity to make morally sound decisions. Aristotle argued that intelligence was a process involving thought and intellect (Akman, 2006).

Afterwards, studies and research regarding intelligence accelerated, particularly in the 19th century. Numerous fresh ideas and thoughts were generated, and several categorizations and classifications were created (Bumin, 2002).

Sir Francis Galton (1869) thought that a person's genetic makeup may be passed down from one generation to the next. He made an effort to gauge intelligence using the senses. Galton's tests comprise visual acuity, tactile sensitivity, and reaction time. Later, he published his thoughts on hereditary intelligence in his book, *Heredity Genius*.

Binet and Simon (1916) assert that judgement, also referred to as good sense, practical sense, initiative, or the faculty of self-adaptation, is a key agent in intelligence whose absence or alteration has the greatest significance

for practical life. In other words, intelligence was a fundamental quality, and lacking it had serious consequences for day-to-day existence.

Charles Spearman (1927) affirms that there is a single, underlying general intellectual, or “g” component, that all intellectual performances draw upon. He developed the first and most basic factor model imaginable, which meant that every test in the intellectual category had just one common factor, “g,” as well as one special particular factor, “s”. All types of mental examinations require general ability (g) to be completed. Only one type of mental test requires a particular ability (s) (cited in Teele, 1999).

Raymond Catell (1963) established a theory of intelligence that was based on the distinction between two independent “g” components. These were intelligence that was fluid “gf” and intelligence that was crystallised “gc”. Fluid intelligence was thought to be a biologically influenced “g” dimension that deteriorates over the course of adulthood. However, “gc” was thought to be modified by education and cultural experiences rather than declining throughout the course of adulthood (Sternberg, 2000).

Robert Sternberg published his work *Beyond IQ: A Triarchic Theory of Human Intelligence* in 1985, which contained his Triarchic Theory. He emphasised the shortcomings of conventional exams like the IQ and others. Only analytical intelligence is measured by tests like the IQ. He argued that these exams only capture a small portion of intellect. Three key ideas are presented in the Triarchic Theory: analytical, practical, and creative. In Sternberg’s view, the foundation of analytical intelligence is formed by the coordinated actions of intelligence’s metacomponents, performance components, and knowledge acquisition components. Creative thinkers have the capacity for original and useful thought. Practical intelligence is intelligence that operates in the real world and in real life. People who are practically intelligent can adapt to their environment.

A few years after these discoveries, Howard Gardner introduced the theory of multiple intelligences in his book, *Frames of Mind: The Theory of Multiple Intelligences* (1983). Gardner, like Sternberg, believed that various forms of intelligence existed. He states that people around the globe do not have one type of intelligence that can be measured by the IQ test; on the contrary, there are several types of intelligence that can be measured by different tests. Gardner (1983) asserts that each person possesses both highly developed intelligence and less developed intelligence, and the intelligence profile could be changed and improved.

According to Gardner (1993), there are numerous approaches to intelligence. Even if everyone is intelligent to some extent, certain people are considered to be ‘at promise.’ In other words, they possess the fundamental traits and competencies of that intelligence at a highly gifted level. An individual’s

level of aptitude for each intellect is different. Because intelligences are separate from one another, a high level in one intelligence does not automatically translate into a high level in another. However, these intelligences are interconnected and do not function or grow independently. For instance, different degrees of bodily-kinesthetic, musical, interpersonal, intrapersonal, and visual intelligence are needed when playing an instrument. Gardner also contends that distinct intelligences exist in different people. However, the educational system only promotes verbal-linguistic and mathematical-logical intelligence. It shows that other forms of intelligence are neglected, and what is more important, his studies helped Gardner come to the conclusion that the traditional view of intelligence was, in fact, inadequate and insufficient (Gardner, 1983). Based on this, in 1983, he developed the theory of multiple intelligences, and only seven types of intelligence were initially recognised by him. These types of intelligence were verbal-linguistic, logical-mathematical, bodily-kinesthetic, visual-spatial, musical, interpersonal, and intrapersonal. Later, Gardner (1999) suggested one more potential new type of intelligence, such as existential intelligence. However, he hesitates to call existential intelligence official intelligence because he is still researching it.

Different Vocabulary Activities for Preschool Learners

As in other foreign language education, vocabulary is of great importance in English language education. As Wilkins asserts, “without grammar, very little can be conveyed; without vocabulary, nothing can be conveyed” (cited in Demircioğlu, 2008, p. 36). In a similar vein, according to McCarthy (1990), vocabulary is the most crucial and significant component of any language course. No matter how thoroughly students know the grammar or the sounds of the foreign language, they cannot express meaning without vocabulary. As a result, communication will be useless. Learners need to master vocabulary, its meanings, and its usage in order to speak effectively and meaningfully in a foreign language.

Words are instruments or tools that individuals use to communicate efficiently, express their ideas, learn new things, and obtain background knowledge. According to Barska, having a small vocabulary might act as a barrier to learning and mastering a foreign language. Students actually lose interest and enthusiasm in learning if they do not know how to increase their vocabulary (cited in Tavil and İşisağ, 2009).

Preschool learners could find it harder to learn the structures than the words. The rationale is that while structures are less useful, words have tangible and immediate meanings. Children in this age range should use language frequently in appropriate circumstances so that it becomes ingrained in their thoughts. This makes it easier to determine how they relate to other words (Phillips, 1993).

Preschool learners or very young learners have a lot of hidden energy, so teachers should come up with appropriate activities while teaching them the target language. When teaching extremely young learners, using vocabulary exercises to teach target words can be an efficient and motivating method. Activities play a significant and successful role in teaching vocabulary to very young learners because they are helpful tools for creating a relevant context (Halliwell, 1992). Very young learners may benefit from different elements in their activities. Furthermore, Halliwell (1992) states that activities can either have a settling or stirring aspect. While settling exercises calm them down, stirring activities energise and stimulate the students. Songs, games, and competitions are examples of inspiring activities that rouse students. On the other hand, calming activities like colouring, listening to music, and copying may stimulate the mind. As a result, teachers must incorporate a wide variety of stirring and calming activities in order to appeal to very young learners (Brewster et al. 2002).

According to Reilly and Ward (2000), songs, chants, and rhymes are important tools for inspiring preschool students to learn English. When combined with dance and mime, they aid the verbal and physical development of very young learners. What is more important is that the language that is used in songs is, in fact, rich with a variety of types of words, which may help learners broaden their vocabulary. In this regard, Ersöz (2010) asserts that children all over the world like songs, and due to this, they love singing and learning them in their native language. Based on this fact, she recommends that the English language teachers adapt songs to their lesson plans. By doing this, teachers may help learners practise target vocabulary. Another undeniable fact is that almost all songs have a lot of repetitions, and due to these repetitions, preschool learners may learn them quite naturally. Also, songs contain linguistic units that learners may use, understand, and retain. Young children easily forget what they learn if they don't practise and apply it. Children should therefore practise and sing the same song at specific times. Children will love singing familiar tunes.

Activities involving art and craft are vital and crucial tools in the classroom. Children's fine motor abilities and eye-hand coordination are developed through these exercises (Grey, 2004). According to Reilly and Ward (2000), craft activities are a highly effective way to give kids comprehensible language input, as they have to listen to instructions in order to complete an activity. The teacher should provide instructions and examples in the target language throughout the craft activity. According to Tavil and Söylemez (2008), learners may initially find it difficult to understand the language of instructions, but when the teacher illustrates the meaning, they may understand it. With practise, students will become accustomed to the instructions, and their understanding of the target vocabulary will grow.

Games are yet another significant and beneficial teaching resource for teachers of very young students. It provides possibilities for language learners to study, practise, and learn the language in a fun and stress-free environment. According to Nyuyen and Khatu (2003), playing games can help students learn vocabulary in a variety of ways. First and foremost, games let students unwind and have fun, which makes it easier for them to learn and remember new terms. Furthermore, games frequently entail friendly competition, which keeps students engaged. These inspire English language learners to engage with and take part in the learning activities (Tavil and İşısağ, 2009). Lewis and Bedson (1999), who contend that language teachers can use games to introduce or review a topic or vocabulary as well as establish and foster a positive learning environment, lend more credence to this viewpoint.

An American psychologist, James Asher, created the Total Physical Response (TPR) method in 1977 in response to his observations of young children's language development. According to Asher (1977), students can learn vocabulary words if the teacher uses the imperative effectively. Reduced stress was one of the primary and significant reasons TPR was created. A lack of stress is a crucial component of good language learning. Providing learners with a stress-free environment includes letting them speak when they are prepared. Otherwise, pressuring them to talk will make them uncomfortable. Making the language learning process pleasurable and stress-free is necessary to reduce anxiety. According to Asher (1977), success attitudes and a low level of worry facilitate learning. TPR is also more important and beneficial for younger students, or more specifically, for preschool students. It can be applied in a variety of ways by teachers. By having kids mimic a song, rhyme, or action, act out a role-play, or persuade them to follow directions in a game or craft activity, for instance (Reilly and Ward, 2000). TPR has a number of significant factors to examine. It engages the auditory, visual, and kinesthetic channels. Children are monitoring the teacher while they offer instructions, in addition to sitting and listening. Younger students have the option of carrying out the commands on their own (Tavil and Söylemez, 2008).

In the classroom, stories are a suitable and useful resource since they help teachers teach vocabulary in context. Regarding this, Tavil and Söylemez (2008) argue that contextual vocabulary instruction is beneficial for preschool learners because this group of learners learns the best vocabulary in context. Moreover, they place an accent on the repetition process. The teachers of the preschool learners should repeat the new vocabulary numerous times in context. The reason for doing that lies in the idea that young learners may easily forget new words, so they require frequent repetition. Stories can therefore aid students in learning words in context as well as repeating them. Furthermore, according to Brewster and Ellis (1991), stories can help teachers provide pupils with positive attitudes towards learning a foreign language and a willing-

ness to keep studying. Additionally, inspiring and enjoyable stories can foster imagination. The inherent ability of stories to create characters, scenes, and ideas fosters children's imaginations and creativity (Salaberri and Zaro, 1995; cited in Dewan, 2005, p. 52).

Drama and dramatisation are also useful teaching aids in the context of language instruction. Stories provide drama and dramatisation with a lot of context. Drama can assist teachers in developing a situation for meaningful language acquisition where students pick up the target language instinctively (Sarıçoban, 2003). It gives children the chance to experience language use and comprehend words in context. Learners will feel more confident and upbeat in this calm and stress-free environment, which will help them learn more efficiently. Furthermore, Maley and Duff (1982) assert that drama affords learners the chance to participate in events by drawing on their individual backgrounds, personalities, and emotional states, as well as their innate capacity to communicate through miming and gesticulation. Drama allows students to put what they have studied into practise. They take part actively and communicate openly, utilising language. Drama also enables students to experiment with language and understand the relationship between cognition and action (El-Nady, 2000).

Role-playing is a crucial component of drama. It can be a helpful and effective tool for teaching foreign languages to students since it enables teachers to build up a variety of scenarios in which students can practise verbal and nonverbal communication under risk-free circumstances (Collier, 1997). It aids language practise in many social circumstances and social roles. Students can use their creativity to give their avatars a unique flair. The ability to understand others and put oneself in their shoes can be improved through this exercise (Sarıçoban, 2004).

Tongue twisters could be another successful and enjoyable teaching exercise for very young students. Gürbüz (2010) asserts that tongue-twisters are entertaining, upbeat, and delightful for students. She claims that kids' ability to pronounce words correctly may be improved by using tongue twisters. Tongue twisters are a fun, motivating, and entertaining way to teach kids new languages. According to Sarıçoban and Küntaş (2010), children should be motivated to move on to the next level of the learning process. Kids enjoy tongue twisters because they view making the sounds as a game. The distraction, motivation, and attention-grabbing properties of tongue twisters help students simply and cheerfully increase their vocabulary, pronunciation, and memorization abilities (Yilar, 2007). Furthermore, tongue-twisters can help teachers transition their pupils smoothly from one assignment to the next (Linse et al., 2005).

All in all, teachers should employ a variety of activities that are acceptable for their qualities and that are developmentally appropriate while teach-

ing vocabulary to preschool learners. Based on the idea that children learn a language by touching, doing, imitating, listening, and watching, activities for this age range of learners should be designed. Consequently, vocabulary is actively learned. Children will learn best, if they are engaged, their effort is valued, and they are given the chance to try and experience things on their own.

Methodology

Subjects

There were 19 preschoolers who took part in the study: 10 boys and 9 girls. The youngsters attended a private kindergarten in Kastamonu. They had just turned five. Every week, the preschoolers took an hour-long English class. They can be regarded as zero beginners in English. There was no random selection or other statistical sampling procedure used because the participants were already a group of pupils. The research was conducted during the spring semester of 2021–2022.

Design

This study was carried out using descriptive and quasi-experimental research methods. The multiple intelligence (MI) profiles of young learners in the preschool were shown using descriptive research techniques. The Teele pictoral MI inventory was used to gather the data.

In most experimental studies, participants are chosen at random. However, when it becomes necessary to base the research on clustered classrooms because it is hard to match the requirements of actual experiments, the research takes on a quasi-experimental nature. When real experiments cannot be conducted, quasi-experimental research is used. ‘Quasi’ is short for almost, somewhat, and close. Because it is based on real-world scenarios that already exist, quasi-experimental research may better reflect the conditions seen in educational contexts (Campbell & Stanley, 1963). In a quasi-experimental design, the researcher made use of classes or groups that had been previously assembled. Therefore, participants are not randomly assigned to a therapy group. Because it enables the researcher to draw valid conclusions, quasi-experimental research is seen as valuable (Ary et al., 2009).

Therefore, in this research, descriptive and quasi-experimental research designs were used. Qualitative and quantitative traits are present in descriptive study designs. In this regard, in the current study, qualitative data were acquired through a semi-structured interview with the participants' English teacher because qualitative data were required to learn more about the participants' knowledge and proficiency in English as well as the teacher's and school principal's comments. The TIMI test, post-test (MI Vocabulary Test

1), and retention test (MI Vocabulary Test 2) were the main methods used to collect quantitative data. A quasi-experimental research methodology was utilised to evaluate the effectiveness of MI-based lesson plans on the learning and retention of vocabulary items because the participants were not chosen at random and the students were presupposed to be zero novices before the MI-based activities were implemented.

Instruments

The instruments used for the study are the TIMI (The Teele Inventory of Multiple Intelligences) test, which was applied to investigate preschoolers' dominant intelligences, a semi-structured interview with the English teacher of the participants, lesson plans based on multiple intelligence activities, a post-test (MI Vocabulary Test 1 for Assessment) and a post-test (MI Vocabulary Test 2 for Assessing Retention), a retention test, and the Wilcoxon Signed Ranks Test. They were used to identify if there were differences between the scores of the two assessment tests.

Procedure

The participants took the TIMI test before MI-based lesson plans were implemented for them. Dr. Sue Teele, a professor of education at California University, created TIMI in 1992. It was especially created to look into the predominant intellect types in learning for kids in preschool through secondary school. The TIMI is a pictural selection test with 56 panda images that represent each of the seven intelligence types. Additionally, there are 28 photo pairs from which the pupils must choose one. In contrast to picture 1B, which depicts a panda playing an instrument, picture 1A depicts a panda singing a song. The students were individually interviewed and asked which pair of images they preferred. The researcher asked the preschool students one-on-one questions. The TIMI test was administered in a laid-back setting. Their responses were written down on an answer sheet, which was later assessed.

In this study, two semi-structured interviews were conducted to learn more about the teacher's perspective on the participants' levels of knowledge and skill as well as the types of activities they engage in during sessions. The participants' teacher was an observer during the application procedure; she did not instruct the learners. She gave her thoughts on lessons, MI-based activities, and students' perspectives on the researcher and the activities in response to questions regarding her opinion. After the observations, a second interview was held to gain more knowledge about the application, its efficacy, and the students' responses and attitudes in the classroom.

The eight lesson plans, totaling twelve lessons (12 sessions), were created to introduce new vocabulary in the context of MI theory. Lesson themes

were chosen in accordance with the preschool English curriculum. There were 55 words in the target vocabulary as a whole. According to the eight intelligence types, each lesson was created. Drawing, cutting, colouring, physical activity, art, craft, chants, nursery rhymes, music, games, puzzles, mazes, and storytelling are all included in the lesson plans. For each class, the researcher employed a variety of materials to successfully and entertainingly teach the target vocabulary. The intelligence, age, needs, and characteristics of the preschool learners were taken into consideration when planning each activity. For six weeks, the researcher served as the instructor. MI vocabulary tests were given to the participants at the end of the sessions. The lessons and tests were recorded and photographed by the researcher.

As was already discussed above, all the participants were absolute beginners. They began learning English for the first time, and based on the comments from their teachers, they did not study the vocabulary and themes that the researcher had taught them. The researcher did not administer a pre-test to the individuals. Assessing the participants' familiarity with the target language, which they had not previously studied, would not be beneficial or acceptable. In this case, administering the pre-test to participants might cause them to feel uneasy and cause them to form a bad opinion of the researcher and the research process. Therefore, the researcher started the investigation after accepting that the participants' skill level was zero beginner.

Six MI vocabulary tasks were created for the post-test to gauge participants' mastery of the intended vocabulary. The intended vocabulary consisted of 55 terms in total. There were 20 target words in each test. The first MI Vocabulary Test encompassed all eight topics and twelve sessions. The students received it on an individual basis. The researcher recorded the answers of the participants on the answer sheet and graded them. The tests were conducted while the researcher recorded and took pictures. In order to produce accurate and reliable results, two young learner specialists examined the tests and integrated their recommendations into the tests. The tests given to the participants were based on a semiotic approach because they were illiterate in their own tongue and could not read or write. Individual preschool learners took the exams from the researcher, who had them act out, point, colour, count, match, draw, and do other tasks.

Four weeks after adopting MI Vocabulary Test 1 for Assessment, participants took MI Vocabulary Test 2 for Assessing Retention. This test was designed to see how much of the students' target language they could still recall. There were ten target words in each test. All eight lessons, or twelve sessions, had been covered. This specified test was conducted in the same manner as MI Vocabulary Test 1.

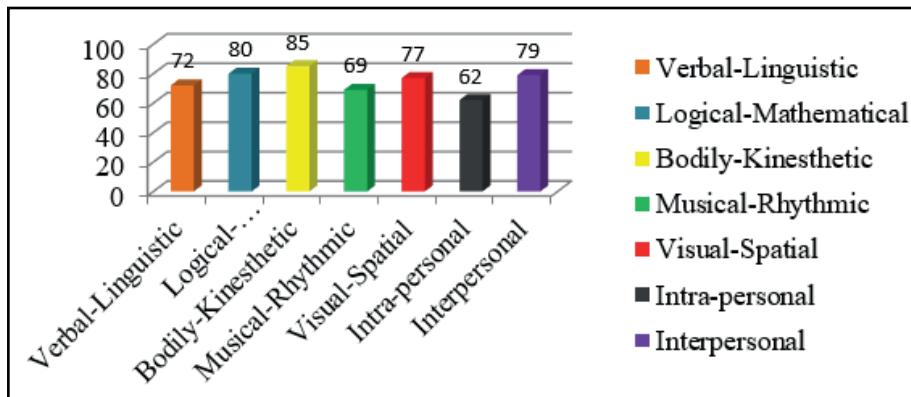
To see if there were any variations in the results of the MI Vocabulary Test 1 for Assessment and the MI Vocabulary Test 2 for Assessing Retention, the Wilcoxon Signed Ranks Test was utilised.

Findings and Discussions

Two interviews have been conducted with the preschoolers' teacher. Prior to implementing MI-based language learning activities, find out what she does in her classes on a regular basis and get to know the students. Moreover, the topics of the six-week application period and target words have been decided together with the English teacher of the participants. The second interview focused on observations of the usefulness and effectiveness of the activities and the reactions of the participants following the six-week MI-based application, during which the English teacher was present in the classroom as an observer.

According to the findings of the first semi-structured interview with the teacher, the teacher mostly uses TPR activities as well as songs, games, and colouring pages. She also instructs preschool learners in English using teaching strategies like repetition, recasting, and questioning. She pays close attention to repetition in particular. She thinks that repetition is essential when working with preschool students since they have a tendency to forget what they have learned. The teacher claims that she cannot employ activities like drama, storytelling, mazes, puzzles, and arts and crafts due to time constraints. Additionally, after seeing the researcher, the children's regular teacher came to the conclusion that vocabulary exercises created in accordance with the learners' MI profiles were beneficial and successful. Activities based on MI can be motivating resources when instructing very young students. She makes a point of highlighting the fact that the kids have really loved the lessons and have picked up the target vocabulary fairly quickly and with a higher level of retention. Preschool English teachers can use these activities to teach the language effectively and without stress. She also recommends adding MI-based exercises to their syllabus.

The findings of the TIMI test are listed in the table below in descending order. It demonstrates that the preschool learners to whom the test was administered have various forms of intelligence and process information in various ways.

Table 1. Multiple Intelligences Profile of 19 Kindergarten Students

The findings confirm that preschool learners need to move about and engage in physical activities since they have a lot of energy. Among other intelligences, their bodily-kinesthetic intellect is dominant. According to the graph, students learn more efficiently when engaged in hands-on activities including movement, dancing, mime, competitive and cooperative games, LEGOs, blocks, drama, role-playing, and the use of body language and gestures. When instructing learners in this group, English language teachers may use these kinds of activities to effectively teach English (Ersöz, 2010).

Also, the participants showed a greater preference for logical-mathematical competence. It demonstrates that preschool learners may learn well by using abstract thought, classifying information, and working with patterns and relationships. Puzzles, rule-based exercises, mazes, calculations, and charts are all acceptable teaching tools (Ersöz, 2010).

Interpersonal intelligence is another type of intelligence that predominates among the subjects. The graph demonstrates how engaging in group activities can help students learn more effectively. These students enjoy social interactions and frequently take the lead in the classroom. They engage in social activities and have a large number of friends (Teele, 2000). Peer sharing, people sculptures, cooperative groups, board games, and simulations are all teaching tools that can be used (Armstrong 2000b).

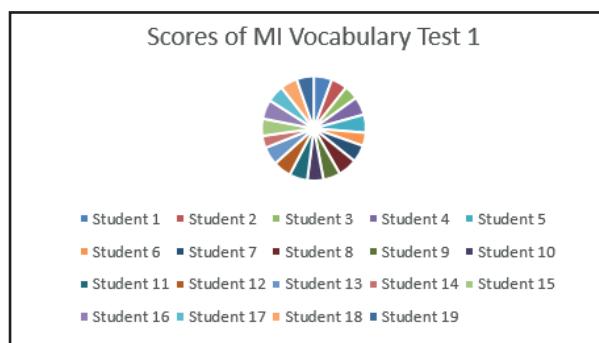
One of the respondents' dominant intelligences can be categorised as spatial intellect. It could be inferred from the participant data that people can actively learn through the use of images, colours, shapes, visualisation, and drawing. Cartoons, images, pictures, PowerPoint presentations, graphs, maps, symbols, movies, and illustrations are all acceptable teaching aids (Ersöz, 2010).

Each participant exhibits all eight intelligences, albeit to varying degrees, according to their individual intellect graphs. Although the major intelligenc-

es of each child vary, they all include the eight intelligences. Each person excels in some areas of intellect, makes some growth in others, and struggles in others (Aşç and Demirciolu, 2004). Using the learners' intelligence to their advantage will increase motivation, lessen anxiety, and promote learning. By including activities that cater to various intelligence types in the classroom, teachers can help kids who are experiencing language anxiety (Oxford, 1999). All students will have an equal chance to learn and succeed if various activities are used in the classroom.

These findings suggest that teachers of preschool students might consider using MI theory to develop their lesson plans. All eight kinds of intelligence should be represented in their activities. Different activities provide the preschoolers with motivation. Lessons of this nature will be more appealing, captivating, and enjoyable. Because preschoolers have such short attention spans, teachers of this age group should use MI activities to help them learn successfully. One more significant point is that while preparing lesson plans for preschoolers, teachers should keep in mind that what works for one student might not work for another.

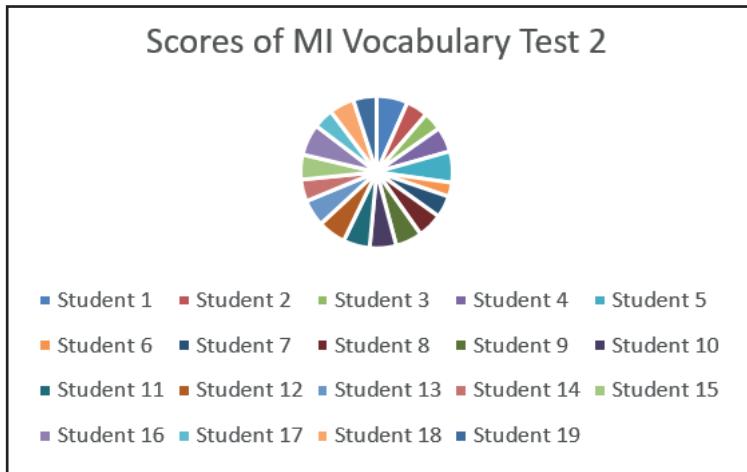
Table 2. Scores of MI Vocabulary Test 1 for Assessment



The test was administered in a stress-free manner—specifically, it took the guise of a game. Each participant completed the test on their own. Because the subjects couldn't read or write, as was already indicated, the researcher provided commands, and the volunteers carried them out as directed. The researcher documented the test process on video. The average score for the class on the post-test MI Vocabulary Test 1 for Assessment was 83,9. In general, all of the participants gave good performances. Their grades were remarkably similar. The contestant with the highest grade received a 95. Only two of the nineteen subjects scored 95. Nineteen subjects totaled six who scored 90. Six participants out of nineteen received 85 points. Two students among the nineteen received 80 points. One participant among nineteen took 70 points.

One of the participants took 65 points, and another took 60 points among the nineteen students.

Table 3. Scores of MI Vocabulary Test 2- Retention Test



To gauge the preschoolers' long-term memory during the research project, MI Vocabulary Test 2 was administered four weeks after MI Vocabulary Test 1. The researcher created six MI vocabulary tests that were equivalent. The second segment of the MI Vocabulary Test has seven sections. All eight lesson plans, or twelve sessions, were addressed in these sections. If they don't keep repeating what they have learned, very young learners could forget it very fast. They have a short memory (Ersöz, 2010). The researcher used the MI Vocabulary Test 2 to measure retention in order to ascertain how long preschoolers could retain the information. One month after the initial test, the second one was put to use. Similar to the MI Vocabulary Test 1 for Assessment, the MI Vocabulary Test 2 for Assessing Retention was implemented as a game. The researcher also takes it personally and records it on camera.

In terms of the second test results, the average grade for the group was 79.2. Three participants obtained a total of three 100-point grades. It is surprising that no one achieved this score on the MI Vocabulary Test 1 for Assessment. Twenty items made up the evaluation test, while 10 items made up the retention test. Student 1, Student 5, and Student 16 may have performed better on the test because of the different quantities of test items, or they may have performed better because of their mood. In addition, as was already indicated, the participants' English teacher uses teaching strategies like questioning, recasting, and repetition. She further asserts that revisiting, particularly at intervals, is essential since it can improve retention. After the application

period, the participants' English teacher stated that she occasionally revised the material in the same way that they had acquired the words. It might also be the cause of these three students' improved grades. On average, one individual out of 19 received 90 points for the remaining subjects. Nineteen contestants received 85 points. Among their buddies, four competitors scored 80 points. One youngster earned 75 points. Three students achieved a score of 70. One subject received 65 points, while another received 60. One youngster earned 45 points. The participants' grades suggest that Student 9 and Student 12's scores remained unchanged. Both tests yielded 85 points for student 9. The learner's strong intelligences are intra-personal and visual-spatial, according to the multiple intellect profile of Sudent 9. It would be appropriate to claim that the activities used during the research period were suitable and efficient for the learner. Also, student 12 scored 90 points on both exams.

The logical-mathematical, musical-rhythmic, and interpersonal intelligences are shown as the learner's dominant intelligences in Student 12's MI profile. The MI-based activities employed throughout the application phase, which include logical-mathematical, musical-rhythmic, and interpersonal intelligence types, may help students learn the target language. The learner scored 60 points on the assessment test and 70 points on the retention test, according to Student 14's grades. In other words, the learner scored higher on the retention test than the evaluation test. It can be thought that the student might not feel at ease and might be unwilling to participate throughout the test. The result for Student 6 is the most unexpected. The student scored 45 on the retention exam and 65 overall on the assessment test. The evaluation test resulted in a higher score than the retention test. Body-kinesthetic intelligence is stronger in Student 6. The other cognitive categories, or more precisely, the other intelligence types, are, however, less strong. Since both of the tests cover more than just performance using bodily-kinesthetic intelligence, it can be concluded that the learner is quite active. Scores for the learner can be impacted. Student 8's grades demonstrate that the learner scored 95 points on the assessment test and 80 points on the retention test. Logic-mathematical, musical-rhythmic, and verbal-linguistic are the learner's dominant intelligences. The learner's recall of the target language may have been impacted if the teacher had not implemented activities that catered to the learner's dominant intelligence types, according to the results and MI profile of the learner. Thus, the average score on the MI Vocabulary Tests 1 and 2 was 83.9 for Test 1 and 79.2 for Test 2.

Table 4. *The Wilcoxon Signed Ranks Test: The Variations in the Results of the MI Vocabulary Tests 1 and 2*

Wilcoxon Signed Ranks Test

	Ranks	N	Mean Rank	Z	P
Retention-assessment	Negative	12 ^a	9.67		
	Positive	5 ^b	7.40		
	Ties	2 ^c			
	Total	19			

a- retention<assessment

a. based on positive ranks

b- retention>assessment

b. Wilcoxon Signed ranks Test

c- retention=assessment

The Wilcoxon Signed Ranks Test was used to determine whether there is a statistically significant difference between the student performances because there are fewer than 30 participants, which lowers the possibility of a normal distribution. The findings indicate that there is no regression in students' target vocabulary size since there is no difference between the assessment of the vocabulary items and their recall.

According to the test results, giving preschool students MI-based activities to do could help them learn and remember vocabulary words better. The results also indicate that there isn't a significant difference between the test outcomes. The participant results obtained from the two tests administered at various periods, namely 83,9 and 79,2, are satisfactory.

Conclusion

The current research was undertaken to demonstrate how vocabulary items can be taught to preschool learners by using Howard Gardner's MI theory. The study was conducted in a Kastamonu preschool classroom with 19 students. With the assistance of the preschool administration and the teacher, parental approval was sought because the participants were young children. Additionally, authorization from Sue Teele was requested before administering the TIMI Test (Teele Inventory for Multiple Intelligences) to identify participants' dominant intelligences.

This study indicates that the participants had much higher mean scores in logical-mathematical and bodily-kinesthetic intelligences than in other categories. In descending order, the learners also showed high preferences for interpersonal and spatial intelligences. The findings are consistent with the notion that very young learners have a tremendous amount of energy and require frequent movement and physical activity. In general, hands-on activities like movement, dancing, mime, competitive and cooperative games, LEGOs, blocks, theatre,

role-playing, and employing body language and gestures can help students learn more successfully. Also, it demonstrates how preschoolers can learn efficiently by classifying, working with patterns and relationships, and engaging in abstract thought. They might also gain knowledge by taking part in group activities. These students enjoy social interactions and frequently take the lead in the classroom. They engage in social activities and have many friends. Furthermore, students can actively learn by using images, colours, forms, imagery, and drawing. The subjects' mean score in linguistic intelligence was lower than others. This may sound concerning because it may be believed that linguistic intelligence is necessary before learning a language. However, it should be kept in mind that there are various ways in which students might learn. Different language learning exercises can be employed in the classroom, knowing and taking into account the students' preferences and strengths. In other words, language learning activities for preschool learners should not just focus on linguistic intelligence but also on other preferred intelligences.

As to the lessons, the researcher designed them in accordance with the eight intelligence types. The eight lesson plans include exercises, arts and crafts projects, chants, nursery rhymes, songs, games, puzzles, and storytelling activities. For each class, the researcher employed a variety of materials to successfully and entertainingly teach the target vocabulary. The intelligence, age, needs, and characteristics of the pupils were taken into consideration when planning each activity.

The children's performances have been evaluated following the six-week implementation process. There are two post-test MI Vocabulary tests that have been created and given: MI Vocabulary Test 1 for Assessment and Retention and MI Vocabulary Test 2 for Assessing Retention. Two academic staff members with expertise in instructing young students have been asked for assistance and comments. MI Vocabulary Tests were created with the learners' illiteracy and the fundamentals of each intelligence in mind. Since the participants couldn't read or write in their native tongue, the researcher had to rely on observation of TPR-based performances or practical exercises like "Act out... Point to... Colour... Count... Match..." The preparation of MI Vocabulary Tests 1 for Assessment and 2 for Assessing Retention used a semiotic approach. First, the MI vocabulary test 1 was used for evaluation, and four weeks later, the MI vocabulary test 2 was used to gauge retention. The test findings demonstrated that the MI-based language exercises assisted the students in learning the target vocabulary in a simple, enjoyable, stress-free, and cheerful manner. Additionally, we can state that the test results do not significantly differ from one another. The participants' test scores from the two tests administered at various times are satisfactory. To conclude, using MI-based activities with preschool students may help them learn and remember vocabulary words better.

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Appendices

Appendix 1

Detailed Sample Lesson Plans

Lesson Plan for “Weather”.

Number of the students: 19

Level of the students: Beginner

Length of the lesson: 60 minutes

Materials: Worksheets, pictures, video, song, crayons, scissors, maze, flashcards.

Language skills: Listening, writing, speaking.

Objectives: By the end of the lesson, the students will be (better) able

- to recognize vocabulary related to the weather;
- to practice vocabulary items.

Multiple Intelligences: Verbal-linguistic, Logical-Mathematical, Visual-Spatial, Bodily-Kinesthetic, Musical-Rhythmic, Intrapersonal, Interpersonal, Naturalistic.

Vocabulary: Snowy, Cloudy, Windy, Sunny, Rainy.

Procedure:

Activities	Aim	Intelligences Studied
<i>Pre-activity</i> <i>Coloring the pictures</i> The teacher gives students photocopies (where pictures of weather is illustrated). They are asked to color the pictures. (<i>See below part A</i>) Meanwhile, the teacher walks around and points to the pictures and tells the target vocabulary.	<ul style="list-style-type: none"> • to warm-up 	Visual-spatial Bodily-kinesthetic Intrapersonal
<i>Making stick puppet</i> Students are asked to cut the pictures which they have colored and tape them onto the sticks. (<i>See below part B</i>)	<ul style="list-style-type: none"> • to create interest in learners to the topic 	Bodily-kinesthetic Visual-spatial Intrapersonal

<p><i>Singing a song</i> <i>The Weather Song</i></p> <p>The teacher sings the song by using stick puppets. Then, students together with their teacher sing the weather song using their stick puppets. (See below part C)</p>	<ul style="list-style-type: none"> • to stimulate students' listening comprehension • to help students learn the following pieces of target language <i>Snowy</i> <i>Cloudy</i> <i>Windy</i> <i>Sunny</i> <i>Rainy</i> 	Musical-rhythmic Linguistic Bodily-kinesthetic Interpersonal
<p><i>Maze</i></p> <p>Students are asked to help the little girl get to her house before it rains. They work individually. (See below part D) The teacher walks around to help. Finally, they do the activity on the board with a bigger copy of the maze as a whole class activity.</p>	<ul style="list-style-type: none"> • to help think logically • to follow-up the topic • to practice the target vocabulary 	Logical-mathematical Visual-spatial Interpersonal Intrapersonal
<p><i>Matching</i></p> <p>The students are given a handout with pictures of weather and related pictures. They are asked to match the weather pictures with related "pictures. (See below part E) They check as a whole class with a lots of repetitions.</p>	<ul style="list-style-type: none"> • to sensitize children to the nature • to practice target vocabulary 	Visual-Spatial Naturalistic Linguistic
<p><i>TPR activity</i></p> <p>The teacher sticks pictures of weather in the classroom and asks students to point to them. For instance: " Point to the sunny weather or point to the cloudy weather"(See below part F)</p>	<ul style="list-style-type: none"> • to recycle words related to the weather <i>Snowy</i> <i>Cloudy</i> <i>Windy</i> <i>Sunny</i> <i>Rainy</i> • to evaluate students' knowledge of words related to the weather 	Linguistic Bodily-kinesthetic Visual-spatial

Part A

COLORING THE PICTURES



Part B

MAKING STICK PUPPET



Part C

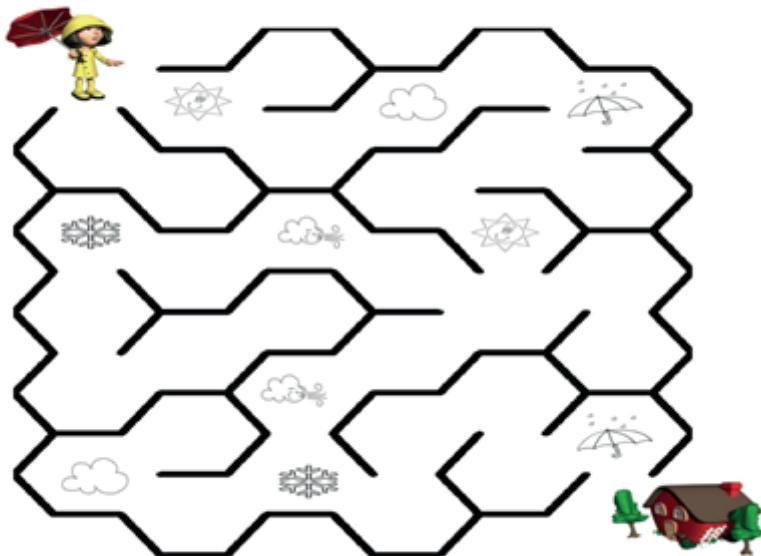
SINGING WEATHER SONG

Sunny, sunny, sunny, sunny,
It is sunny in the sky.
S-U-N-N-Y, sunny,
It is sunny in the sky.
Cloudy, cloudy, cloudy, cloudy,
It is cloudy in the sky.
C-L-O-U-D-Y, cloudy,
It is cloudy in the sky.
Rainy, rainy, rainy, rainy,
It is rainy in the sky.
R-A-I-N-Y, rainy,
It is rainy in the sky.
Windy, windy, windy, windy,
It is windy in the sky.
W-I-N-D-Y, windy,
It is windy in the sky.
Snowy, snowy, snowy, snowy,
It is snowy in the sky.

S-N-O-W-Y, snowy,
It is snowy in the sky.

Part D

MAZE



Part E

MATCHING





Part F

TPR ACTIVITY. POINT TO THE SUNNY, CLOUDY, WINDY, RAINY,
SNOWY





Appendix 2

Post-test MI Vocabulary Test for Assessment

Test 1

NAME:

SCORE:

Score the child's performance. Put a tick (✓) or cross (x).

A. Act Out (TPR): Jump
 Sleep

Walk

Stop

B. Point to your nose
 knee

ear

C. Color the shirt red.
 Color the hat green.

Color the coat blue.



D. Act Out! Point to the banana!

Eat the apple!



E. How many?



F. What's the weather like?



G. Point to the small ball.



Point to the strong man.



Chapter 6

THE ROLE OF PARENT'S EDUCATIONAL INVOLVEMENT IN STUDENTS' ACADEMIC ACHIEVEMENT BY BOTH SOCIOECONOMIC STATUS AND PREVIOUS ACADEMIC ACHIEVEMENT

Turhan ŞENGÖNÜL¹

¹ Doç. Dr. Turhan ŞENGÖNÜL, Ege University, Faculty of Education,
Elementary Education Department, Classroom Education Science² Branch
Bornova/ İZMİR Turkey, e-mail: turhan.sengonul@ege.edu.tr,
ORCID Number: 0000-0003-4760-2204



Introduction

Educational involvement demonstrated by parents in primary and secondary school was closely associated with students' academic success. Nevertheless, it has been asserted that the long-term effects of parental interest are lesser known. The present research has examined the relationships between different parental practices such as parental educational interest at home and at school, educational expectations and academic advice, as well as proximal academic outcomes, like student grades, and distal academic consequences, like educational attainment. It has been discussed whether these relationships changed as a function of the socioeconomic status of the family or the previous academic achievement of the adolescents. In recent years, two trends along the education line have been observed in societies. High school dropout rates have declined to the lowest level, and there has been a regular increase in high school completion, university enrollment, and university graduate rates over the past 40 years (Snyder, Dillow, & Hoffman, 2008; Snyderand Dillow, 2013). Even with policies and efforts implemented to increase educational opportunities, educational stratification as well as educational inequalities have continued to exist in societies. Socioeconomic inequalities have significantly affected students at every stage of their education (Rothstein, 2004; Kena, Aud, Johnson, Wang, Zhang & Rathbun, 2014). The educational and economic mobility of individuals in societies is strongly related to the educational achievement of parents (Reynolds & Johnson, 2011). Individuals who graduated from university were able to earn more income and attain greater gains than individuals who graduated from high school and lower schools. The income and earnings gap between individuals who have graduated from university and those who have a high school diploma or lower has increased greatly in the last 20 years, and therefore, the policies and initiatives implemented to enhance and advance the educational achievement of individuals have assumed greater significance and priority (Fry, 2013). Lower levels of education and educational attainment could be more associated with poorer chances of wealth throughout life, greater unemployment and lower prestige jobs, on the one hand, and with poorer health chances, more health problems, higher rates of drug abuse, and imprisonment, on the other. The rate of individuals with lower levels of education and educational attainment was found to be higher both among the poor, the unemployed, and those working in less prestigious jobs, as well as among those with health problems, drug users and prisoners (Institute of Medicine, 2014).

Efforts on how to best develop and enhance the academic achievement of children and adolescents through cooperation and collaborative work of families, teachers, school administrators and the Ministry of Education have gained great significance and priority. Parents' involvement and active

participating in the educational lives of their children and adolescents has been regarded as a promising path for improving educational prospects and chances of academic achievement in children and adolescents. Parental educational involvement could be associated with stronger educational outcomes of students (Jeynes, 2007; Zhan & Sherraden, 2011). The association between parental academic interest and students' educational consequences seemed to change according to the type of involvement (Hill & Tyson, 2009) and socioeconomic status (Hill, Castellino, Lansford, Nowlin, Dodge, Bates, & Pettit, 2004).

Employing nationally-representative longitudinal data from high school students, the researchers especially explored the associations among three types of involvement, namely parental educational interest at home and at school, their academic socialization as well as students' academic performance and eventual educational attainment. They argued whether students' socioeconomic status and previous academic success levels influenced the association between parental interest and academic success of students. The research attempted to establish whether the associations between parental academic involvement and students' educational consequences were stronger or weaker for both lower and higher SES students, and students with lower and higher previous academic achievement. The current study focused on explaining the value of educational interventions resulting from parental interest, and pointed to the degree to which particular aspects of parental interest might be more or less effectual on students' academic success.

Parental Involvement and Adolescents' Educational and Academic Achievement

Parental academic involvement has been conceptualized in a multidimensional manner as parental educational interest at home and at school as well as academic socialization of parents (Hill & Tyson, 2009). Parental educational involvement at home encompassed certain activities that parents undertook for their children at home that consolidated, strengthened and solidified school-based learning such as supervising homework, helping homework completion, and implementing educational enrichment activities. School-based involvement, on the other hand, implied active involvement of parents in the school environment through activities such as attending in school activities, volunteering at school, or communicating and conferring with teachers at parent-teacher meeting or other campus activities. Academic socialization, on the one hand, was comprised of conveying parents' views on the value and significance of education and their educational expectations for their children, while on the other hand, more concrete conversations and discussions held by parents to improve and enhance future educational and professional plans of their children. By means of academic socialization efforts, parents strived to provide their children with the applications necessary for

gaining independence and academic achievement (Hill & Tyson, 2009).

All three aspects of parents' educational interest were positively associated with students' educational achievement, such as higher school grades, better success tests score, more engagement in school, and improved grades (Jeynes, 2005, 2007; Cheung & Pomerantz, 2011). Meta-analytic studies referred to different impacts for types of parental educational involvement. Academic socialization was most strongly associated with students' academic success. Parents' educational interest in school was positively linked to students' academic achievement, but its effects appeared to be weaker. Parents' educational interest at home was more varying and wavering, in such a way that enrichment activities tended to enhance success, while providing help for homework appeared to be negatively linked to educational consequences (Hill & Tyson, 2009).

Potential Change in the Association between Parental Involvement and Students' Academic Consequences

In general terms, differences and variations in the association between socioeconomic status and both parents' educational interest and students' academic consequences could be documented and verified. Low-income and less-educated parents often dealt and struggled with the stresses, tensions, challenges and difficulties caused by poor income and economic hardships. Davis-Kean (2005) and Carolan and Wasserman (2015) indicated that compared to more prosperous and wealthier parents, low-income and less-educated parents were more likely to signify lower educational expectations for their children. Cheadle and Amato (2011) and Roksa and Potter (2011) asserted that low SES parents with low income and less education were, on average, less involved and less engaged in education of their children at home and at school. Socioeconomic status or social class was related to the school performance and success of children and adolescents. Children and adolescents born, reared and cultivated in wealthier and more prosperous families generally outperformed and achieved better results than their poor and low SES peers on each standard measure of academic success and academic engagement ((Huston & Bentley 2010; Reardon 2011; Sirin 2005)).

Apart from these well-defined mean-level differences, there are also some findings that the relationship between parents' academic interest and students' educational consequences can be determined by various aspects of socioeconomic status, or that there is some evidence suggesting that socioeconomic status mediates the relationship between parental interest and students' educational achievement. The relationships between parents' educational involvement in their children at home and their academic socialization and students' educational engagement seemed stronger for students from families in lower socioeconomic status compared to students

from wealthier and more prosperous families (Wang & Sheikh-Khalil, 2014). Likewise, children from lower socioeconomic status backgrounds were able to gain more benefits both in academic reading and mathematics from their parents' involvement in activities based on their educational involvement at home, such as going to a museum or participating a concert, (Roksa & Potter, 2011). Higher SES parents were engaged in their children's development and concerted cultivation and exerted a deliberate and sustained effort to encourage, nurture, enhance and advance cognitive, intellectual, academic, social, emotional development and skills of their children (Lareau, 2003). Parental engagement in their children's cognitive, intellectual, academic, social, and emotional development and concerted cultivation often required both educational involvements at home and at school, as well as academic socialization efforts. While some studies exposed that deliberate, planned and constant efforts of parents for the cognitive, intellectual, academic, social and emotional development and cultivation of their children had a stronger impact on lower SES children and adolescents (Greenman, Bodovski, & Reed, 2011; Jæger 2011), other studies showed that children from higher rather than lower SES or social class had a stronger impact on mathematics and reading achievement (Roksa & Potter, 2011). A study conducted on African American families revealed that parents' educational involvement in school was positively associated with children's approach to learning in families with university-educated parents. These associations were found to be non-significant in African American families when parents had a high school diploma and below as highest level of parent education (Dumais, Kessinger, & Ghosh, 2012).

The potential change in the association between parents' educational interest and students' academic success according to socioeconomic status has been discussed. Both bio-environmental theories (Bronfenbrenner & Morris, 2006) and life-process theories (Elder, 1998) asserted that close environmental contexts such as family, parental care, SES have an influence on the cognitive, intellectual, academic, social and emotional development of children and adolescents. He argued that it could increase either accumulated advantages or accumulated disadvantages. Although SES indicators, such as education levels of parents, might limit the levels or amounts of educational interest, parents were able to ensure such care and its effects. Other characteristics of children, such as previous academic achievement levels, could motivate and encourage parents to really engage more in educational interest activities that could provide greater benefits and make more contribution to their child's education and academic success.

Englund, Luckner, Whaley, & Egeland (2004) discovered that children who obtained academic success early in school had higher parental educational expectations than their peers with poorer academic performance, and that

these differences in educational expectations continued to exist throughout elementary school. Crosnoe and Huston (2007) reported those adolescents' developmental characteristics, such as their feelings about personal control or whether their academic plans and academic achievements were within or outside their control, as well as academic socialization, such as parents' conversations and discussions with adolescents within the framework of their decisions on which courses to take and which academic direction to follow. They also investigated the implications of the socioeconomic status of the family for the academic achievement of students. Students at the lowest socioeconomic status in the 25% quintile disclosed that they were negatively affected by very high levels of parental academic socialization and low feelings of self-control, as the most impaired combination of self-control and parental involvement. The students at the highest socioeconomic status in the 25% quintile stated that they were influenced by the very high levels of academic socialization of their parents and high feelings of self-control. They strived to designate whether the relations between educational interest and academic consequences were conjointly effected by family socioeconomic status and previous success of young people. Researchers focused on the relationship between the educational involvement of parents and the academic progress of students throughout life and the factors that can affect these relationships. They sought an answer to the question "To what extent are parents' educational involvement and academic socialization at home and school associated with grades as proximal indicators of students' educational achievement and with educational attainments as distal indicators." Meta-analyses revealed that each aspect of parental educational interest was positively related to educational consequences (Fan & Chen, 2001; Hill & Tyson, 2009; Jeynes, 2003, 2007). The associations between parents' conveying their educational expectations and academic advice to their children and adolescents as a form of academic socialization and students' academic outcomes were stronger than the impact of parental interest at home or at school. Both the proximate and longer-term implications of parental interest for students' attitudes, behaviors, actions and activities along educational lines and trajectories were discussed.

The researchers also investigated the extent to which two variables, namely families' socioeconomic status and students' previous academic success, independently and jointly determined the influences of parental interest on academic outcomes of students. While indicating the particular stability of the educational trajectories of high-achieving students from higher SES families, it was stressed that more educational support should be provided to students from lower socioeconomic status (Lareau, 2003). It was asserted that the relationships between parents' educational interest and students' academic consequences (a) may be weaker in higher socioeconomic status families, especially when adolescents are highly successful, and (b) may be

stronger in lower socioeconomic status families, irrespective of students' previous academic success.

Studies that deliberately concentrated on parental educational involvement in high school indicated that although autonomy and individuation increased in high school years, adolescents could make educational decisions that might affect their trajectories in their following life processes, and that parents could play a significant role at this sensitive and delicate intersection of time (Kim & Schneider, 2005). Furthermore, it has been stressed that the educational involvement of parents typically decreases as students progress through the educational system from kindergarten to primary, secondary and high school (Hill & Tyson, 2009). When documented and demonstrated, the constant positive impact of parental interest on older adolescents' school success and eventual educational attainment should be deemed necessary for high school policies and interventions to focus on ways that can enhance parental involvement, especially aimed at compensating for and offsetting the natural decline in parental intervention observed through the years.

Methods

Researchers obtained data from the Education Longitudinal Surveys (ELS) conducted by the National Center for Education Statistics (NCES) that included longitudinal samples of high school students, parents, and teachers in many different locations (Ingels et al. 2004, 2005, 2014). They carried out a longitudinal study with a sample of 15,240 students enrolled in 10th grade to investigate the significant links between both parents' educational involvement at school and parents' educational expectations, and adolescents' cumulative high school grade points and educational attainment. Nationally representative educational longitudinal research investigated the effects of parent, school, and community factors for students' academic trajectories throughout high school and post-secondary education and during employment. Data collection in the first wave of the longitudinal research started in 2002 with 15,362 10th grade students from 752 schools participated in the sampling (Ingels et al. 2004). Student data were gathered primarily in schools in a group environment and parent, teacher and administrator surveys were performed. Follow-up studies were performed with the same participants in the 12th grade in 2004 (Wave 2) and 2006 (Wave 3) as well as in 2012 (Wave 4). These ensuing data collections basically focused on student participants. Both parent data from Wave 1 and student and school enrollment data from Wave 2 and Wave 4 were used. Researchers made use of not only parent data from Wave 1 but also student and school enrollment data from Wave 2 and Wave 4.

The analysis sample was comprised of 15,240 students with a mean age of 16.46 and a standard deviation of 0.63 from 752 schools with any valid

Wave 1 data. The sample size included 50% female students from a variety of racial/ethnic backgrounds, including 57% Caucasian (White), 13% African American, 15% Latino, 9% Asian American, and 6% other race/ethnicity. The students' families had an average household income of \$35,001 to \$50,000, and the average educational level of the participants' parents was post-secondary education, but not a 4-year degree. Descriptive information related to the research participants is presented in Table 1.

Table 1: Demographic characteristics of the sample

Variable	N	Frequency	(M)Mean	SD
Student Gender				
Male	7.580	49,7		
Female	7.670	50,3		
Student race/ethnicity				
Caucasian (White)	8.680	57,0		
African American	2.020	13,3		
Latino	2.220	14,5		
Asian American	1.400	9,2		
Other races/ethnicities	930	6,1		
Student age	15,190		16,46	0,63
Parental income	15.240		9,06	2,42
Parental education	15.240		4,51	2,09
Socioeconomic status composite	14.100		0,19	0,68
School sector				
Public	10.400	69,7		
Private	4510	30,3		
Total % of students eligible for free and discounted lunch			23,48	24,84

(Benner, Boyle & Sadler, 2016, p. 1057)

Data for the research was gathered from students, parents, and school records. Bivariate correlations and descriptive statistics are shown in Table 2.

Operationalizing Parental Involvement

In the first wave of the study, parents self reported their educational involvement at home, involvement at school, and academic socialization of 10th grade students. For home-based educational involvement, parents answered two items that assessed how often they had helped children with homework or school projects over the past year on a four-point scale of 1 = never, 4 = often/always. Higher mean scores pointed to higher levels of parental educational involvement at home ($r = .23$, $p < .001$). Parental educational involvement at school was evaluated utilizing the “yes” or “no” response to four items about parental involvement in school activities, such as being a member of the school’s PTA and acting as a volunteer at school, that particular academic

year. Two aspects of academic socialization were measured. Parents answered four items about providing academic advice or information to adolescents, such as choosing courses or programs at school, applying to college or other schools after high school. These items were assessed on a three-point scale, namely 0 = never, 1 = sometimes, 2 = often, and higher mean scores pointed to greater provision of academic advice (Cronbach's $\alpha = 0.74$). In order to rate educational expectations, a form of academic socialization, parents reported how far they expected adolescents to go in their education. Parents expressed their adolescents' educational expectations on a scale ranging from 1 = 'less than a high school degree' to 7 = PhD or another advanced degree.

Operationalizing Students' Academic Success and Educational Attainment

In the second wave of the study, proximal school success of students was designated using the high school grade point average transcripts of 12th grade students. The unweighted grade point averages of the students were categorized using an 8-point scale, ranging from 0 = 0.00-0.50 to 8 = 3.51-4.00. In Wave 4 of the study, students self-reported the highest levels of education they completed in 2012, about 8 years after their anticipated graduation from high school. Students indicated their level of education on a 10-point scale, ranging from 1 = 'not finished high school' to 10 = 'completed a PhD degree, medical doctorate or another advanced degree'.

Operationalizing Socioeconomic Status

In Wave 1 of the study, the socioeconomic status of families was measured, employing self-reports of both mothers and fathers about the highest levels of education they had completed, family income, and professional prestige. Education of mother, education of father, family income, professional prestige of mother, professional prestige of father were evaluated as the main markers of socioeconomic status (Ingels, Pratt, Rogers, Siegel, & Stutts, 2004). The composite variable of socioeconomic status was determined as the mean of the standard z-scores for each of the five variables, namely education of mother, education of father, family income, professional prestige of mother, professional prestige of father. Students living and residing in a single-parent family had a socioeconomic status composite point, reflecting either mother's or father's education, income, and professional prestige. Researchers figured out the professional prestige of parents using the 1989 General Social Survey, an extensively-used, valid and reliable measure of socioeconomic status or social class position (Nakao & Treas, 1994). The composite variable of socioeconomic status was based on a continuous scale ranging from -1.98 to 2.11, with higher points that indicated higher family socioeconomic status.

Operationalizing Students' Previous Academic Achievement

The success of the students was determined as the mean of the students' standard mathematics and reading points in Wave 1 of the study (range = 10-90).

Covariates

Students' gender, race/ethnicity and age were participated in the study as individual variables. School administrators notified both whether the school was a public institution and whether all the students were included in the free or discounted lunch program.

Table 2 Correlations, means, and standard deviation

Variable	1	2	3	4	5	6	7	8
1 Parental educational involvement at home (Wave 1)	-							
2. Parental educational involvement at school (Wave 1)	.15	-						
3. Parental educational expectations (Wave 1)	.02	.14	-					
4. Parental Academic advice (Wave 1)	.32	.19	.19	-				
5. Grade point average (Wave 2)	-.08	.16	.26	.06	-			
6. Educational attainment (Wave 4)	-.06	.18	.29	.11	.55	-		
7. Family SES (Wave 1)	-.04	.26	.26	.13	.33	.38	-	
8. Composite test scores (Wave 1)	-.13	.14	.31	.08	.56	.47	.42	-
Mean (M)	1,92	0,32	5,41	1,20	4,93	4,48	0,15	50,7
Standard deviation (SD)	0,76	0,34	1,26	0,55	1,54	1,95	0,68	9,96
N	12430	12370	13100	12400	13980	12530	14100	15240

(Benner, Boyle & Sadler, 2016, p. 1058)

The researchers employed hierarchical models in their longitudinal studies to test the main impacts of parental interest as well as the potential moderating role of socioeconomic status and students' previous academic success. Model 1 presented the main impacts of four parental interest variables, together with the main impacts of families' socioeconomic status and students' previous success. All potential two-way interactions between each indicator of parental interest and both the families' socioeconomic status and previous academic success of students were presented in Model 2. Model 3 presented all the potential three-way interactions among markers of parental involvement, families' socioeconomic status, and students' previous success. Analyses were utilized to explore all significant three-way interactions as well as all two-way interactions.

Results

Researchers performed longitudinal examinations related to the relationships between parents' educational interest, educational expectations, and academic advice for their 10th grade children at home and at school, and their GPA in 12th grade and educational attainment 8 years after their high school graduation.

Table 3 Socioeconomic status and student success as moderators of the association between parental educational involvement and educational consequences of students

	Students' grade point averages β (SE)	Students' educational attainments β (SE)
Parental educational involvement at home	-0.00 (.01)	-0.02 (.01)
Parental educational involvement at school	0.06 (.01)***	0.06 (.01)***
Parental educational expectations	0.09 (.01)***	0.10 (.01)***
Parental academic advice	-0.01 (.01)	0.04 (.01)***
Family socioeconomic status	0.09 (.01)***	0.19 (.01)***
Composite academic test scores	0.44 (.01)***	0.31 (.01)***
School sector	-0.00 (.01)	-0.04 (.01)***
Free and discounted lunch	0.06 (.02)***	-0.03 (.01)**

* $p < .05$; ** $p < .01$; *** $p < .001$ (Benner, Boyle & Sadler, 2016, p. 1062).

After considering the main impacts of the covariates, the research exposed that higher levels of parental interest at school and greater educational expectations from children were related to both higher overall grade point averages and greater educational attainment of students. Higher levels of parents' academic advice were related to greater educational attainment of students, but unrelated to GPAs in 12th grade. Parents' educational involvement at home did not seem to be associated with either the students' grade point averages or educational attainment.

Upon investigating the impacts of the interaction, a significant three-way interaction was discovered, including the conditional relationships between the educational involvement of parents at school and eventual educational attainment of students, in accordance with SES and previous academic achievement of students. The beta coefficients reflected the results from the analyses as co-factors affecting the result. The research displayed that the relationship between parental interest at school and students' educational attainment was significant and positive across all groups. This relationship, however, was found to be strongest for low-achieving students of higher socioeconomic status ($Beta = .12$, $p < 001$) and for high-achieving students of lower socioeconomic status ($Beta = .09$, $p = .001$); whereas, it appeared weakest, although still significant, for high-achieving students in higher socioeconomic status ($Beta = .05$, $< .01$) and for low-achieving students in

lower socioeconomic status ($\text{Beta} = .04$, $p < .05$) (Benner, Boyle & Sadler, 2016, p. 1060).

Besides this three-way interaction, several two-way interactions underscored the conditional impacts of families' socioeconomic status or students' previous academic achievement. The association between the educational expectations of the parents and both the GPA and the educational attainment of the students were contingent on or determined by the previous success of the students. The analysis exposed that the association between educational expectations of parents and students' cumulative grade point averages was approximately twice as strong for students with higher previous academic success ($\text{Beta} = .15$, $p < .001$) as compared to students with lower previous academic success ($\text{Beta} = .07$, $p < .001$). Likewise, the association between parents' educational expectations and students' eventual educational attainment was twice the magnitude for higher-achieving students ($\text{Beta} = .16$, $p < .001$) as compared to low-achieving students ($\text{Beta} = .08$, $p < .001$). The association between parents' educational involvement at school and students' overall grade point averages was contingent on students' previous academic success. This relationship was significantly stronger for low-achieving students ($\text{Beta} = .12$, $p < .001$) as compared to previously high achieving students ($\text{Beta} = .03$, $p < .01$). Furthermore, students from higher SES families ultimately gained more benefits than educational expectations of parents with respect to educational attainment ($\text{Beta} = .15$ $p < .001$) when compared to students from lower SES families ($\text{Beta} = .08$, $p < .001$) (Benner, Boyle & Sadler, 2016, p. 1060).

Discussion

In spite of the increase in policies and initiatives aimed at enhancing high school graduation and university entrance and attendance rates in societies (Kena, Aud, Johnson, Wang, Zhang, & Rathbun, 2014), academic performance inequalities and gaps among students from lower and higher SES families continued to exist (OECD 2014). Despite the fact that academic achievement differences, inequalities and gaps attributed to students' demographics and socioeconomic status are narrowing, a great achievement divide between students from families in higher socioeconomic status and those from families in lower socioeconomic status continued to persist (Reardon, 2011). Educational involvement of parents provided a malleable support that can enhance and promote students' academic achievement in high school and beyond. The relationships between parents' educational interest and academic socialization at home and at school, as well as students' proximal academic outcomes as grades and distal academic consequences as educational attainments were examined.

Researchers attempted to better understand whether particular types of parental educational interest were especially favorable for particular students. They examined whether the relationships between parents' educational involvement and students' grades and educational attainment changed as a function and consequence of families' socioeconomic status or adolescents' previous academic success, either independently or conjointly. Drawing data from the Education Longitudinal Survey, researchers generally observed significant relationships between parents' educational expectations, both as a form of educational involvement in school and as a form of academic socialization, and adolescents' grades two years later. Studies investigated the relationships between parental educational interest and students' academic consequences in secondary school and confirmed the significant and positive general and type-specific impacts of parental academic interest on academic success (Jeynes, 2007; Hill & Tyson, 2009).

The present research explored the long-term effects of parental interest in the eventual educational attainment of high school students. Greater parental interest in school as well as educational expectations of adolescents as a form of academic socialization and academic advice to adolescents were both associated with greater educational attainment of students above and beyond the influences of a large number of related covariates. While the magnitude of the beta coefficients of educational expectations affecting the outcome as co-working factors were of similar size to family income and gender, it was more than twice as large as the magnitude of the influences of race/ethnicity. All of the main markers of socioeconomic status, including family income, education of mother, education of father, occupation of mother, and occupation of father were well-established to correlate with students' educational attainment (Everett, Rogers, Hummer, & Krueger, 2011; McDaniel, DiPrete, Buchmann, & Shwed, 2011). Educational involvement of parents continued to show its effect on the long-term extension of parental interest in the lives of students 10 years later.

The analysis exposed that the educational involvement of parents in school was especially beneficial for more disadvantaged students, such as those from families in lower socioeconomic status and those with poorer previous academic success. Contrastingly, parents' educational expectations, a form of academic socialization, appeared to be especially influential and powerful for generally more advantaged students, such as those from families in higher socioeconomic status and those with previously higher academic success. Practices based on the educational involvement of parents included the idea of concerted cultivation of their children in cognitive, intellectual, academic, social and emotional manners.

Concerted cultivation practices in families contributed to the educational achievement of students through cultural reproduction. The cultural

socialization that children experience and receive at home provided children with crucial social capital such as interpersonal skills, connections and educational practices that is cherished especially in the dominant social institutions and the schools (Bourdieu, 1973; Lareau, 2003). Cultural reproduction theory has proposed that children and adolescents would be in a more advantageous position and gain maximum benefits from their parents' educational involvement when parents have more cultural and social capital and are best equipped to transfer this capital to their children. When operationalized as the educational expectations of parents from their children and adolescents, academic socialization was typically more strongly associated with educational achievement for more advantaged higher SES children and adolescents. Parents in higher socioeconomic status with higher incomes, higher education levels and higher professional prestige were able to mobilize, utilize and expend their economic, cultural and social capital for the education of their children and adolescents. On the contrary, low-income and less-educated parents and their children who historically performed more poorly at school were able to deal with and engage in a "value tension" and parents were able to lower down the thresholds for acceptable levels of educational achievement by attempting to reconcile their feelings of efficacy in education of their children (McLoyd, 1998).

Parents' interest in their children's school did not necessitate the same social capital and hence could be less sensitive to mechanisms that socialized children and adolescents culturally. Although parents in lower socioeconomic status have employment, their ability to attend in school-based activities may be limited due to transportation or language restrictions (Hill & Taylor, 2004). School-based activities, such as participating parent-teacher conferences or Parent-Teacher Association meetings, did not often necessitate parents to have specific educational skills. Essentially, parents were able to have a greater motivation to engage in these activities and were more effective in doing these activities. In addition, the yield returned on parents' spending time and effort in school-based activities and the cultural capital transferred through these efforts, or the cultural capital conveyed to them in the process of parental involvement in children's school, was most probably another advantage for students who are in a more disadvantaged position according to the cultural mobility model. Otherwise stated, it was particularly effective and powerful both for students from lower socioeconomic status and for those with traditionally low educational attainment (Jæger, 2011).

When the socioeconomic status of the families and the previous academic achievement intersection of the students were explored together, the impacts of school-based involvement were diverse and varied especially across the groups. Students having one of both disadvantages, such as being born into and living in a lower SES family or having low previous academic achievement,

in other words, both students from families in low socioeconomic status but with high academic success and those from families in higher socioeconomic status but with low academic success students gained maximum benefits from their parents' school-based attention, especially with respect to their eventual educational attainment. The life-course theory doctrine of accumulating advantages vs. disadvantages asserted that early life experiences could promote and enhance well-being and place individuals on life-course trajectories of continued academic achievement. However, as individuals accumulated and increased disadvantages, failures, upsets and setbacks in early life, their life course trajectories could deviate and vary (Elder, 1998). It was also argued that it was often pretty difficult to switch these trajectories once they were activated. Studies contributed to our perception of the proximal and distal impacts of parents' educational interest on students' educational achievement and changes in these relationships.

Conclusion

Educational involvement of parents played a crucial role in the academic life of students. Efforts to support students' educational achievement had clear implications. Strategies constructed on parental involvement appeared to be more effective when integrated with educational interventions (Jeynes, 2012; Park & Holloway, 2013; Patall, Cooper, & Robinson, 2008). Efforts based upon the educational involvement of parents could be more effectual and productive for students when strategically targeted. Higher SES parents with higher incomes, higher education levels and higher occupational prestige were able to utilize, mobilize and expend their economic, cultural and social capital for their children and adolescents. Parents clearly conveyed their educational expectations to their children and adolescents by providing academic support and undertaking academic interventions. The analyses revealed that the educational involvement of parents in school was more productive when students were especially disadvantaged, came from lower SES families and had previously poorer grades. Academic socialization of parents, on the other hand, was better able to promote and enhance academic achievement for students who were in more advantageous positions, came from families with higher socioeconomic status, and who had higher previous achievement. Parents' educational involvement as well as their academic interventions and encouragement were all intended for improving students' educational success. Programs or interventions that served more disadvantaged students or those who were academically struggling attempted to stimulate parents' active involvement in school-based activities and exerted greater efforts along these lines. It was asserted that the educational involvement of parents at home, such as helping with homework and school projects, was less important for promoting and enhancing students' academic success. Despite this contention, parents were able to improve academic achievement when

they provided academic assistance and support through help with homework and more sophisticated and skillful intervention and intrusion techniques regarding academic struggles of children and adolescents (Pomerantz & Murray-Eaton, 2001; Robinson & Harris, 2014). Nevertheless, when a balance of educational supports is needed, a positive main influence of academic advice on students' eventual educational attainment is observed. Parental interventions and supports that find the suitable balance of unobtrusive educational assistance are worthwhile for students. Future studies addressing the association between parental educational involvement and students' academic success should focus more on the activities and characteristics of teachers, schools, and administrators that can better provide or obstruct parents' educational interest, and examine the most effective strategies for enhancing and improving the academic achievement of all students.

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Chapter 7

THE ROLE OF EXPLICIT ARGUMENTATION ON PRE-SERVICE SCIENCE TEACHERS' COMPREHENSION OF ATMOSPHERE-RELATED ISSUES

Duygu METİN PETEN¹

Pınar Seda ÇETİN²

¹ Associate Professor, Ege University, Department of Mathematics and Science Education, ORCID 0000-0002-4704-8605, duygu.metin.peten@ege.edu.tr

² Professor, Abant Izzet Baysal University, Department of Mathematics and Science Education, ORCID 0000-0003-4299-0893, peticin@ibu.edu.tr



Introduction

The global dimension of environmental problems and the need for international cooperation in solving these problems has established a ground for the development of many supranational initiatives such as the United Nations Declaration on the Human Environment, Brundtland Report, the United Nations Framework Convention on Climate Change, and the Rio Declaration on Environment and Development. Parallel to this, science and environmental education have been an important part of educational policies in preparing and educating the new generation on these subjects, so that the new generation becomes aware of the problems and the precautionary measures to anticipate, prevent, or minimize the causes of the environmental problems identified in the frameworks. To achieve this, in an education perspective, training scientifically and environmentally literate citizens become essential and crucial in all around the world. As science literate, students are expected to understand how human activities should be managed in order not to harm the environment and therefore be responsible to the environment and natural resources in PISA (OECD, 2007). In the same manner, an environmentally literate individual is supposed to be aware of the condition of environmental resources and employ necessary actions and measures to sustain, protect, or enhance those systems (Roth, 1992). Smederevac-Lalic et al. (2020) underlined the importance and necessity of the right kind of environmental knowledge in providing Environmental Citizenship and encouraging citizens to engage in pro-environmental actions.

However, there are consistent evidence that learners from worldwide have incorrect or incomplete understanding of environmental systems since the confusion in the conceptual understanding of these systems. In recent years, a number of studies have provided well-documented evidence indicating that students from different age groups worldwide have various kinds of misconceptions about atmosphere-related issues such as climate change, greenhouse effect, ozone layer depletion, and acid rain (Andersson & Wallin, 2000; Boyes & Stanisstreet, 1997; Chang & Pascua, 2016; Jarrett & Takacs, 2020; Jeffries, Stanisstreet, & Boyes, 2001; Kahraman, 2019; Kılinc, Stanisstreet, & Boyes, 2008; Pruneau, Liboiron, Vrain, Gravel, Bourque, & Langis 2001; Varela, Sesto, & Garcia-Rodeja, 2018).

Misconceptions about atmosphere-related issues

The argument for why misconceptions in atmosphere-related issues should be detected and remedied is based on various reasons. The first one is based on knowledge construction. Misconceptions are often considered as obstacle to learning, as learners construct their learning on their pre-existing concepts, according to the constructivist learning theory (Osborne, Bell, & Gilbert, 1983; Smith, Disessa, & Roschelle, 1994). The other one is based

on interconnectedness between conceptualization about environmental issues and pro-environmental behaviors. Ozdem, Dal, Ozturk, Sonmez & Alper (2014) found that students in seventh grade were more likely to blame modern living and the big countries as a main reason of climate change, and for that reason they had tendency to believe that nothing can be done about the climate change. However, learners with right environmental knowledge would have tendency to take pro-environmental behaviors such as recycling, using eco-friendly products, saving energy, avoiding use of chemicals and water conservation (Ahmad, Juhdi, & Awadz, 2010; Bamberg & Möser, 2007; Coyle, 2005).

On the other hand, research-based evidence presented that the students created different concepts or perceived causal connections about global environmental issues in their mental models that do not square with available scientific knowledge, and they legitimize these concepts in a way that they are consistent within their mental models (Boyes & Stanisstreet, 1997; Chang & Pascua, 2016; Grima, Filho, & Pace, 2010; Gowda, Fox, & Magelky, 1997). One reason for this situation, would be the misconceptions of the preservice or in-service teachers who are supposed to teach free from misconceptions. Teachers' conceptions on the subject ought to be acknowledged an essential but not adequate precursor for detecting their students' misunderstandings on the same subject (Sadler & Sonnert 2016). Related literature provided evidence for clear link between the PSTs' misconceptions about atmosphere-related issue and that of students have (Butler, Mooney Simmie, & O'Grady, 2015; Gungordu, Yalcin-Celik, & Kilic, 2017; Kabapinar, Cengiz, & Aglarcı, 2018). In addition, some research studies conducted with teachers or PSTs showed that they have misconceptions about atmosphere-related issues like the misconceptions identified in the literature that students have (Etobro, 2020; Khalid, 2001, 2003; Michail, Stamou, & Stamou, 2007; Papadimitriou, 2004).

Atmosphere-related Interventions for Dealing with Misconceptions

Although there have been a lot of studies on learners' misconceptions regarding environmental issues, there has been relatively little study on the effectiveness of atmosphere-related instructions in addressing learners' grasp of these concepts. Research studies investigating effective atmosphere-related instructions have benefited from several strategies such as visual materials, constructivist learning activities or conceptual change model. For instance, Bozdogan (2011) explored the impact of instruction with visual materials such as documentary film, photographs, animations, cartoons, comics, and PowerPoint presentations in reducing the lack of understanding and misconceptions regarding global warming among pre-service teachers when compared to traditional instruction and found that visual materials were better in fostering true understanding and reducing misconceptions. Karpudewan,

Roth and Chandrakesan (2015) investigated the effect of climate change-related teaching activities based on constructivist approach on 16-17-year-old students' grasp of climate change concepts. When compared to their counterparts in the teacher-centred course, the students in the experimental group had much less misconceptions about atmosphere-related issues as a result of the quasi-experimental design. Similar results were obtained by Heng, Karpudewan and Chandrakesan (2017), showing that specific climate change activities increased students' understandings about atmosphere-related issues and reduced their misconceptions about these issues.

Research studies focusing on conceptual change model also benefited from several strategies such as reading-based instruction, inquiry, and combination of role-play, discussion, and argumentation. For instance, in order to enhance university students' grasp of the greenhouse effect and human impact on climate, McCuin, Hayhoe and Hayhoe (2014) compared the effectiveness of the reading instruction in a traditional and misconception-based ways. Central of their study assumes that misconceptions could endure despite concept-based training, but they can be broken down by explicitly addressing them through reading-based instruction, according to conceptual change model. The findings showed that, while both instructions improved students' comprehension of atmosphere-related issues, the students in the misconceptions reading-based instruction group showed significantly prolonged progress on misconception-related problems, even in delayed test. According to these results, researchers suggested that direct misconceptions reading-based instruction is beneficial in long-term period in providing conceptual learning. Gautier and Solomon (2005) designed a course that included reading, lectures, conceptual maps, and the opportunity for students to conduct their own investigation by using up-to-date user-friendly climate model. In Earth Science course with university students which took ten weeks, the researchers used a cognitive apprenticeship technique. The students' ability to formulate questions relate to their selected variable under investigation improved, and the students constructed appropriate experiments, but the nature of their experiments did not dramatically change throughout the course, according to preliminary findings. Based on this result, the researchers deduced that conceptual learning occurred during the course. In similar design, Rebich and Gautier (2005) employed The Mock Environment Summit course in which university students enrolled in role-playing and in-class discussion and argumentation on climate change. The aim of the course was to facilitate conceptual change by using cognitive conflict approach and to reduce misconceptions. Students' conceptual understandings were evaluated by conceptual maps applied as pre/post-course. The result provided evidence that students' conceptual learning significantly increased, and their misconceptions and weak conceptions significantly decreased.

However, limited research studies were found employing argumentation-based instruction in conceptual learning about atmosphere-related issues. For instance, Pekel (2019) investigated the effectiveness of argumentation-based concept cartoons on ninth graders comprehension of atmosphere-related issues. The aim of this course was to facilitate conceptual change by using argumentation-based concept cartoon which include both scientifically acceptable viewpoints and common misconceptions about subject. The study evidenced that argumentation-based concept cartoons provided statistically significant success regarding students understanding of atmosphere-related issues, when compared to traditional teaching approach. In these studies, argumentation was applied to create a discussion and reasoning environment accompanied to concept cartoons to support students' learning. However, explicit argumentation including Toulmin's Argument Pattern (TAP) was used to provide conceptual learning and conceptual change in various subjects such as Newton's three laws and gravity (Nussbaum & Sinatra, 2003), reaction rate in chemistry (Cetin, 2014), chemical equilibrium (Aydeniz & Dogan, 2016) and engineering statics (Foutz, 2019). To the best knowledge of researchers, there is no study conducted to facilitate conceptual learning and to reduce misconceptions about atmosphere-related issues by using explicit argumentation including claim, data, warrant, qualifier, rebuttal, and backing (Erduran, Simon & Osborne, 2004; Toulmin, 1958).

The Role of Argumentation in Conceptual Learning

Argumentation takes place in a central position in science and science education (Driver, Newton & Osborne, 2000; Simon, Erduran, & Osborne, 2006). Argumentation can be defined as the justification of knowledge claims with evidence and reasons (Jiménez-Aleixandre & Erduran, 2008). The process of argumentation requires "assessing alternatives, weighing evidence, interpreting texts, and evaluating the potential viability of scientific claims" (Driver, Newton, & Osborne, 2000, p. 288). Erduran, Kaya and Cetin (2017) provided consolidated framework to bring together the conceptual change, argumentation, models, and explanations that can be used by teachers and in in-service science teacher education program. They offered Benzene Ring and theories-laws-models/TLM heuristics, which underpin and provide conceptual change in different ways. While the first one forms basis for concept development through processes such as prediction, data collection, explanation and justification, the other supports conceptual change through meta-level changes in theories, laws, and models in science. In both approaches, argumentation is considered as a mediating process for conceptual learning and conceptual change.

Recently, Berland and Russ (2017) discussed the possibilities of conceptual change through argumentation, and they considered argumentation and conceptual transformation as a dynamic process of concept revision. They

advocated that through interaction and argumentation in class, students seek to construct and defend their claims and to connect others' arguments into their own and refine their learning. Similarly, Zhou (2010) proposed instructional process for using argumentation in conceptual learning. Zhou (2010) acknowledged that argumentation includes disagreements and, the disagreement between students' preconceptions/misconception and the scientific notion about subject creates cognitive conflict which requires conceptual change. This instructional process enables students to construct what appropriate concept should be according to their lack of satisfaction, disagreement between scientific notions and their conceptual structure and, evidence and justifications they get through the process. These representations in the related literature constitute the basis for thinking about conceptual learning through explicit argumentation and dealing with misconceptions through explicit argumentation.

Explicit argumentation activities in which PSTs engage in argumentation about global environmental issues, make their own claims, use their claims and evidence to state their agreement or disagreement by considering alternative views about the issues, justify their viewpoints to persuade their opponents and try to understand their opponents' viewpoints would improve their understanding of atmosphere-related issues and would reduce their level of misconception about these issues. In this regard, the goal of this study was to explore the impact of environmental instruction based on explicit argumentation on PSTs' comprehension of atmosphere-related issues.

Therefore, the research question was the following: What influence does an argumentation-based instruction have on PSTs' conceptual grasp of atmosphere-related issues? The results provided by the present study could be considered as being of importance in teacher training for fostering argumentative learning environment and dealing with misconceptions on global environmental issues.

Methodology

This study applied a quasi-experimental design with a non-equivalent control group (Gay & Airasian, 2000). One of the two classes is designated as an argumentation group, while another is designated as a comparison group. The second author of the research conducted the lessons in both classes. Each group had two 50-minute lessons each week for the duration of the treatment, which lasted seven weeks. The first and the last week of the study were dedicated to collecting data. During the instruction, the experimental group participated in explicit argumentation lessons related to atmosphere-related environmental problems unit, whereas the lessons were conducted traditionally in the comparison group. Global warming, greenhouse effect, ozone layer depletion, and acid rain were among the themes discussed. The

AREPDiT (atmospheric-related environmental issues diagnostic test) was administered to both groups as a pre and post-test to evaluate PSTs' conceptual grasp of atmosphere-related issues.

Subject

This study included 64 pre-service third-grade science teachers from two entire classes. The argumentation group comprised of 33 participants, while the comparison group consisted of 31 participants, all of whom were between the ages of 20 and 22. They were chosen according to convenience sampling and were enrolled in a Special Issues in Chemistry course given by the same instructor. The participants were intending to get a degree in elementary science teaching from a state university which only welcomes students who performed the highest 10% on a nationwide university entrance exam.

Instrument

Arslan, Cigdemoglu and Moseley (2012) developed the diagnostic test (AREPDiT) and, Cigdemoglu and Arslan (2017) translated and adopted into Turkish. This multiple-choice diagnostic test includes 13 items with three-tier. The first tier of each question includes multiple choice content question, the second tier asks the reason for the answer given in the first tier, and the third tier measures whether or not the subject are confident about their responses. The Cronbach alpha reliability value was reported as 0.74 for original test (Arslan et al., 2012) and 0.73 for the translated one (Cigdemoglu & Arslan, 2017).

Classroom instruction

Participants of the study attended a two-hour weekly course on special issues in chemistry. During the instruction they engaged in four activities related to global warming, greenhouse effect, ozone layer depletion and acid rain. The syllabus showing which subject will be covered each week was distributed to PSTs in both groups at the beginning of the term. Moreover, before the study, all the participants attended the argumentation session, which was aiming at introducing the definition of argumentation, components of the argument, characteristics of strong and weak argument and role of argumentation in science and science education. During the argumentation session, both groups also participated in an argumentation activity about a topic that they encounter daily. In this process, Toulmin's Argument Pattern (TAP) was followed.

In the experimental group each activity started with an argumentative question given in Table 1. The participants were asked to argue their opinions about given situations in writing individually. In this process, the participants were encouraged to produce as many responses as they could to each situation. To encourage their discussion, the prompts questions such

as “what decision have you made?”, “do you demand additional information to make your decision?”, “why do you believe that is the case?”, “how do you persuade others who do not share your viewpoint?”, were questioned. Following that, a class discussion in which the entire class participated was implemented after each written argumentation task. The instructor asked PSTs to recall what they learned in the argumentation introduction lesson. The purpose of these sessions was to highlight the significance of projecting on one’s own perspectives, weighing evidence, considering data quality into account, and providing counterarguments. In addition, the instructor focused on determining and clarifying the PSTs’ misconceptions.

Lecture and discussion, on the other hand, were the primary teaching methods in the control group. During the instruction, the instructor did not emphasize what was learned in the argumentation introduction lesson. At the beginning of each activity the instructor showed a video related to subject of the day. Then she asked them to reflect their thoughts about the video in verbal. After a few PSTs shared their ideas, the instructor started to explain the subject. Throughout the lessons, the instructor clarified the subject and wrote main concepts and principles on the board. Finally, before the lesson was over, the instructor asked the PSTs to share their opinions and questions on the subject.

Table 1
Activities and Argumentative Questions

Activities	Argumentative Questions
Greenhouse effect (GE)	Imagine you are attending a congress on global environmental problems. Which of the scientists whose ideas are presented below would you agree with? Scientist 1. Greenhouse effect is natural. In fact, some beneficial results for human life are observed by overcoming some difficulties related to cold weather. Scientist 2. The greenhouse effect is an unnatural process. It is the result of human activities and can have dangerous consequences for human life.
Acid rain (AR)	Do you think acid rain will still be a problem in 2030? Or as we have seen many times in history, plants and animals will adapt to the changes caused by acid rain without facing any serious problem. Why?
Global warming (GW)	Do you think global warming is as serious a problem as advertised? Or do you think it may be a trump card that countries use to prevent each other’s activities in the industrial race
Ozone layer depletion (OLD)	Do you think restrictions should be imposed on some industrial activities and the use of certain products to prevent ozone depletion? Or are the economic problems that will arise because of taking these measures more serious than the problems caused by the depletion of the ozone layer?

Analysis of data

Arslan, Cigdemoglu and Moseley (2012) stated that eight different scores for each question can be calculated for each student. The sum of right answers to the first tier of each question is depicted as *first-tier score*. The sum of

right answer to both tiers represents the *both tiers score*, and the total right answers to the first and second tier with certainty is depicted as the *total score*. The total of uncertainty response to both tiers regardless of correct or incorrect represents the *lack of knowledge score*. The *certainty score* is depicted as participants positive responses (certain) to third tier. *M-first tier score* shows participants' misconceptions calculated by summing the wrong answers to first tier, *M-both tier score* is related to misconceptions of participants calculated by considering the wrong answers to first and second tiers together. And finally, the participants' total misconceptions in both tiers along with being certain is depicted as *M-all tiers score*. Detailed information on how these score types are calculated was given in Arslan, Cigdemoglu and Moseley (2012).

Results

To investigate the effect of argumentation-based instruction on PSTs' conceptual understanding of atmosphere-related issues, the total scores of the participants were examined. The results revealed that the treatment and comparison groups' mean pre-total scores were not significantly different ($t(62) = 0.07, p>.05$). Furthermore, the post-total scores of the participants in the argumentation group were statistically higher than the post-total scores of the participants in the control group ($t(62) = 2.35, p<.05$). Table 2 presents the statistics related to t-test analysis.

Table 2
Comparison Between Experimental and Comparison Groups by Independent Samples T-Test

Tests	Group	N	\bar{X}	SD	Df	t	p	d
Pre	Experimental	33	3.42	3.64	62	0.07	0.948	
	Comparison	31	3.48	3.60				
Post	Experimental	33	5.84	2.27	62	2.35	0.022	0.59
	Comparison	31	4.35	2.78				

The fact that the test is three tier allows us to calculate the percentages of correct answer, percentages of lack of knowledge and lucky guess. In dept analysis of post AREPDiT scores of PSTs may help us to understand how the argumentation-based instruction effect PSTs understanding in atmosphere-related issues. Table 3 and Table 4 shows these data based on the post AREPDiT scores of experimental and comparison group, respectively.

According to Table 3 overall lack of knowledge mean percentage is 33.5% which means that one third of experimental group lack correct understanding about atmosphere-related environmental issues. The fewest understood subjects are GE and AR with lack of knowledge mean percentages of 40.9%

and 38.4%. Moreover, GW is the most well understood subject with the lowest lack of knowledge mean score (26.5%). Examination of the total score of each item revealed that almost eighty percent of the preservice teachers in experimental group gave right answer to the ozone layer question (item 7) with 90% confidence. However, only 27% of the PSTs correctly answer the item 11 which is related the acid rain. Lastly, it can be said that PSTs in experimental group gave answer to each question with high confidence with that range of 46.9-90.0 % (whether the answer is correct or incorrect).

In Table 4, it can be seen that more than half of the participants in the comparison group lack true conceptualization of atmosphere-related environmental issues depicted in the overall lack of knowledge mean (52.5%). The lack of knowledge mean percentages of 63.4% and 53.4% points that GE and AR are the least known content area for comparison group. Moreover, GW is the most well understood subject with the lowest lack of knowledge mean score (43.8%). As we consider the percentages of total scores of each item, item 7 seemed to the most well-known (58.1% of comparison group students correctly answer to all tiers with 38.7% confidence). However, only 16.1% of the preservice teachers correctly answer the item 11 which is related the acid rain. The lack of knowledge percentage of item 11 was 64.5% which agrees the total score result. Additionally, PSTs in comparison group gave answers to questions with lower certainty levels that range of 27.4-54.8%.

Table 3
Percentage of the Experimental Group Responses in Post AREPDiT

Content area	AREPDiT item	% Correct response			% Lack of knowledge	% Certainty
		Only first tier	Both two tiers	All three tiers		
GW	1	75.7	45.4	36.4	21.2	75.7
	2	78.7	57.5	42.4	30.3	63.6
	5	84.0	63.0	54.5	27.2	63
	6	81.8	63.0	54.5	27.2	63.6
Mean% GW		80.1	57.2	46.9	26.5	66.5
GE	3	75.7	60.6	40.0	42.4	54.5
	4	63.6	54.5	36.4	39.4	57.5
Mean% GE		69.7	57.5	38.2	40.9	56
OLD	7	90.0	81.8	78.0	6.00	90.0
	8	84.0	60.6	48.5	30.3	60.6
	9	84.0	54.5	45.5	42.4	57.5
	10	81.8	60.6	42.4	33.3	57.5
Mean % OLD		84.9	64.4	53.6	28	66.4
AR	11	45.4	36.4	27.0	33.3	46.9
	12	60.6	45.4	39.4	42.4	53.5
	13	54.5	48.5	39.4	39.4	46.9
Mean% AR		53.5	43.4	35.2	38.4	49.1
Mean %		72.1	55.6	43	33.5	59.5

Table 4
Percentage of the Comparison Group Responses in Post AREPDiT

Content area	AREPDiT item	% Correct response				
		Only first tier	Both two tiers	All three tiers	% Lack of knowledge	% Certainty
GW	1	74.2	48.3	32.3	40.3	51.6
	2	71.0	51.6	33	35.5	54.8
	5	64.5	51.6	35.5	51.6	40.3
	6	80.6	64.5	41.9	47.8	46.7
Mean% GW		72.6	54	35.7	43.8	42.6
GE	3	61.2	40.2	25.8	61.2	32.3
	4	64.5	48.3	35.5	65.5	27.4
Mean% GE		62.9	44.3	30.7	63.4	29.9
OLD	7	80.6	64.5	58.1	40.2	38.7
	8	51.6	38.7	22.6	51.6	40.2
	9	71.0	54.8	38.7	58.0	33.0
	10	58.0	33.0	29	48.3	40.2
Mean % OLD		65.3	47.8	37.1	49.5	38.0
AR	11	48.3	35.5	16.1	64.5	32.3
	12	61.2	54.8	25.8	47.8	42.6
	13	74.2	51.6	40.2	47.8	40.3
Mean% AR		61.2	47.3	27.4	53.4	38.4
Mean %		65.5	48.4	40.3	52.5	37.2

Lastly to see effect of argument-based instruction on preservice teachers' misconceptions about atmosphere-related issues, we examined percentages of participants having certain misconceptions. When reporting, we selected the misconceptions that PSTs had the highest percentage. Table 5 shows the most common misconceptions and percentages of both groups before and after the treatment. It is important to note that the percentages were calculated based on M-all tiers' scores. In their paper Arslan, Cigdemoglu and Moseley (2012) discussed the advantages of considering all tiers when determining misconceptions in detail.

Table 5
List of Misconceptions and Percentages of PSTs Having These Misconceptions

Misconceptions	Before the treatment		After the treatment	
	Experimental (%)	Comparison (%)	Experimental (%)	Comparison (%)
Global warming is caused by ozone layer depletion	21	19	21	23
Global warming will cause skin cancer	18	23	15	23
Acid rain is a result of global warming	18	19	15	16
Global warming can be reduced without building nuclear power plants	15	19	12	13

Greenhouse effect is totally harmful phenomenon for mankind	12	10	9	10
The ozone layer protects the earth from acid rain	12	10	9	10
Using public transportation reduces ozone layer depletion	9	16	9	16
Using filters for smoke reduces ozone layer depletion	9	10	6	6
CO is the main culprit of acid rain	9	13	6	6

Table 5 indicates that misconceptions held by preservice teachers in experimental group reduces more than that of comparison group. Moreover, the misconceptions that “GW is caused by OLD” and “Using public transportation reduces OLD” seems very robust and resistant to change after the instruction in experimental and comparison group.

Discussion and Conclusion

The purpose of this study was to explore how explicit argumentation instruction affected PSTs' understanding of atmosphere-related issues. The results suggested that the explicit argumentation instruction had a beneficial effect on PSTs' understanding of atmosphere-related issues. In both groups, the total mean scores on the AREPDiT improved. Because all PSTs in both groups had spent 5 weeks studying GW, GE, OLD, and AR, this finding is not surprising. Nevertheless, the argumentation group had significantly higher total AREPDiT score over the period of the explicit argumentation-based course than the comparison group did. These findings suggest that these PSTs improved their comprehension of atmosphere-related issues in just five weeks (ten lessons) after receiving instruction in argumentation, writing individual arguments, participating in whole-class argumentation, and explicit debriefing during discussion by the instructor. These findings are in line with previous research which have shown the impact of explicit teaching and participation in argumentation on science comprehension. (Aydeniz, Pabuccu, Cetin & Kaya, 2012; Buber & Coban, 2017; Venville & Dawson, 2010; Eskin & Ogan-Bekiroglu, 2013; Larrain, Singer, Strasser, Howe, López, Pinochet, Moran, Sánchez, Silva & Villavicencio, 2021; Nussbaum, Sinatra & Poliquin, 2008).

After participation to explicit argumentation activities related to GW, GE, OLD, and AR, the experimental group gained higher percentages in all-three-tiers in each content area, which means that more participants in the argumentation group gave correct answers for the first and second tier, and they were confident in their answers (correct+correct+certain). The percentages of the total correct response in all three tiers were ranging from 35.2 to 53.6 in experimental group and from 27.4 to 37.1 in the comparison group. Additionally, the overall lack of knowledge mean score of the argumentation group was lower than the overall lack of knowledge score of the comparison

group. This indicated that less PSTs in argumentation group have inaccurate conceptualizations of atmosphere-related environmental issues. In parallel to this, the certainty percentage of the argumentation group was higher than the certainty percentage of the comparison group, which means that PSTs in the argumentation group were more confident about their response. This result gives further support to Cross, Taasoobshirazi, Hendricks, and Hickey's (2008) idea that acknowledged that argumentation allows you to have a better and more secure comprehension of pre-existing concepts.

There are several possible explanations for why the argumentation group had significantly greater comprehension of atmosphere-related issues when compared to the comparison group. The argumentation-based activities which aim to make the PSTs consider the quality of data and evaluate the evidence when they reflect on their positions about GW, GE, OLD, and AR offered a conceptual learning opportunity. This opportunity may have led the PSTs to criticize and reason out their pre-existing concepts about the subject while they write the arguments individually or discuss the subject as a whole class (Metin Peten, 2022). Engaging argumentation in such processes required PSTs to make claims, to justify their claims by using data and evidence and to make their argument more quality to make others convince. By this way, they might not only revise their pre-existing concepts, but also, they might construct new scientific concepts (Yaman, 2021). Argumentative learning environments support learning, as it encourages learners to think more deeply and promotes them to connect and organize isolated concepts that are existing previously (Venville & Dawson, 2010). With argumentative activities in atmosphere-related environmental issues, the PSTs may have gained the opportunity to connect their previous knowledge with their new knowledge, and as a result, they may have gained the opportunity to think and understand more deeply about the subject being studied (Berland & Russ, 2017).

Additionally, in the whole class discussion process, the PSTs shared their viewpoints and claims, they were challenged by others, and they challenged others by asking data and evidence to justify claims. These impacts may have resulted in the significantly better understanding of atmosphere-related issues in the argumentation group compared with the comparison group, as Bereiter (1994) acknowledged that a fresh understanding that involves collaborative discussion and accepted by everyone is superior to what is previously knew. The PSTs working collaboratively often could teach and learn from each other by evaluating each other's claim and evidence. Moreover, when learners work collaboratively, they are more likely to be metacognitive about how they approach learning (Cook, Kennedy, & McGuire, 2013).

Consequently, the findings suggested that explicit argumentation-based instruction was more successful in removing PSTs' misconceptions in the argumentation group compared to the lecture and discussion combination in

the comparison group. Writing individual argument and engaging in whole class argumentation accompanied by explicit debriefing discussion by the instructor may have promoted effective learning environment for the PSTs to reflect their points of view and to reveal and eliminate their misconceptions-a perspective suggested by Berland and Russ (2017) and Zhou (2010) and supported by the study findings of Pekel (2019) in area of atmosphere-related issues and of Cetin (2014) and, Aydeniz and Dogan (2016) in other subjects. The contradiction between PSTs and their peers' preconceptions/misconception and scientific notions in the explicit argumentation environment may have allowed the PSTs to construct new concepts or to alter the existing ones. In this process, argumentation, applied as main medium in the present study, provided mediating process for conceptual learning and conceptual change (Erduran, Kaya & Cetin, 2017).

Nevertheless, the results pointed out that while enhancing and expanding their conceptual understandings about atmosphere-related issues, the PSTs in both groups have still misconceptions which are resisted to change even after the instruction (Gautier, Deutsch & Rebich, 2006). These misconceptions are compatible with the related literature (Arslan, Cigdemoglu & Moseley, 2012; Kahraman, 2019; Karpudewan, Roth & Chandrakesan (2015). According to conceptual change theory suggested by Chi, Slotta and de Leeuw (1994), ontological status of the concepts (matter or process) impacts their comprehension by the students. Most of the scientific concepts are learned by the students as matters, in despite of the fact that these scientific concepts include many processes. In parallel, atmosphere-related concepts such as GW, OLD, GE and AR involve several processes that needs to be comprehended by learners to maintain desirable conceptualizations. However, because of the complex and demanding nature of atmosphere-related concepts, these concepts would be tough and confusing for the learners. One of the most robust misconceptions in the present study is that GW is caused by OLD. The PSTs may have referred GW and OLD to matter ontologically and they may have assumed that these two matters are the main cause of each other. Notwithstanding, GW and OLD involve processes that occur because of different factors. According to theory that mentioned above, if learners attribute particular concept as a matter for its ontological status, and if scientific ontological status of the concept is process as most of the scientific concepts have, difficulties have been occur in learning.

Considering inherent limitations of the current study, the findings of this study contribute to the understanding about how explicit argumentation activities impact on PSTs' understanding of atmosphere-related issues and complements previous research findings.

Despite inherent limitations of the current study, the findings of this study contribute to the understanding about how explicit argumentation

activities impact on PSTs' understanding of atmosphere-related issues and complements previous research findings. The study's findings are important in demonstrating how argument-based instruction about atmosphere-related issues improves PSTs' comprehension and how these activities reduce their misconceptions. When we consider that PSTs communicate and teach in the same way that they learned, this study suggests that providing PSTs with argumentation is necessary for both their own understanding and their future teaching professions.

For further investigation, the researchers would propose two possible studies. First, a study with similar population can be applied to assess how explicit argumentation activities affect PSTs' grasp of other science subjects. The second would examine into the ontological status of the concepts attributed by the PSTs to understand why some misconceptions regarding environmental issues remain resistant to change.

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Chapter 8

A COMPARATIVE ANALYSIS OF PROOFREADING CAPABILITIES: LANGUAGE EXPERTS VS. CHATGPT

Nermin PUNAR ÖZÇELİK¹



¹ Department of Foreign Languages, Tarsus University
ORCID: 0000-0001-8772-0075, nerminpunar@gmail.com

Introduction

This chapter sets out on an examination of new frontiers in the area where the practice of proofreading intersects with the development of groundbreaking technology. The main objective is to assess ChatGPT, a sophisticated AI system, compared to a human language expert's proofreading skills. The goal is to investigate the advantages and disadvantages of the ChatGPT algorithm to see if it has the capacity to replace human proofreaders as a trustworthy alternative. While elevating the proofreading process and advancing AI technology, this research offers priceless insights for upcoming study and development.

Understanding the deep significance of AI-based proofreading systems, their capabilities, limits, and potential applications becomes crucial in the context of language-related jobs. I uncover the true potential of this algorithm by carefully analyzing ChatGPT's efficiency as a proofreader, going beyond the limitations of conventional methods. We learn more about the dynamic interaction between AI and human knowledge and unearth novel insights that will influence the future landscape of proofreading procedures by comparing its performance to that of human proofreaders.

This chapter extends an intellectual invitation to you as I set out to explore AI's unrealised potential in proofreading. Together, we will go into the details of this study, examining the benefits and drawbacks, victories and difficulties of using AI algorithms for linguistic improvement. By taking this route, I hope to transform the proofreading industry, bridging the intellectual and technological divide and opening the door to improved language accuracy and productivity.

This chapter serves as our compass, pointing the way to a future in which AI smoothly integrates with the craft of proofreading, revolutionizing how we approach language improvement and opening up new fields of study and research.

Artificial Intelligence

Artificial intelligence (AI) has been a highly popular topic for a few years, and as technology improves, the use of AI tools has been increasing day by day. While various definitions of AI have been uttered by scholars, Grewal (2014), in his article critically analyzing of definitions of AI, has recommended a definition as "the mechanical simulation system of collecting knowledge and information and processing intelligence of universe: collecting and interpreting and disseminating it to the eligible in the form of actionable intelligence". Chatbots, smart assistants, e-payments, search algorithms, media streaming, smart cars, navigation apps, facial recognition, text editors, and social media feeds are the examples of AI in our era.

The use of these AI programs/tools in education has been researched by authors over years. Haristiani et al (2019) reported that chatbots might be used as language tutors or independent learning mediums in the language learning process. Kim et al (2019) claimed that chatbots can enrich language inputs and bring opportunities for learners to raise communicative competence. Liebrecht and van Hooijdonk (2020) reported that the findings of the previous studies might be a useful source to design human-like chatbots that use a natural and personal communication style like their human conversation partner. Siddhant Singh (2020) claimed chatbots have the potential to improve human interaction with machines. AlGhamdi (2022), in his review, set out to explore scientific studies and research to give a view of artificial intelligence in education. He concluded that the utilization of artificial intelligence has been beneficial for promoting education, optimizing fundamental teaching duties, supporting executives of educational institutions, and helping to resolve issues and obstacles the education sector encounters. Briefly, it might be said that to create a high-tech education system focused on the future, it is crucial to use artificial intelligence's advantages better (Lufeng, 2018).

On the other hand, another AI-enhanced platform, called ChatGPT, has been released lately. According to OpenAI, which is the developer of ChatGPT, it is “a trained model and a chatbot interacting with people in a conversational way, answering questions, admitting its mistakes, etc.” Based on this definition and its features, it may not be hard to say that ChatGPT is exactly the one Christine Liebrecht (2020) mentioned in her study.

ChatGPT and Proofreading

Writing is a multifaceted endeavor that involves a systematic progression through various stages. These stages encompass prewriting, research, drafting, revision of content, revision of organization, editing, proofreading, and eventual publication (Kasper-Ferguson, Stephanie, & Roy A. Moxley, 2002). Furthermore, the academic research publication process can be delineated into four fundamental phases: submission, editorial review, production, and the final print publication. Before making the academic article ready for submission, authors need to proofread their articles in order to be sure of having no mistakes. Then, the publication stages occur one by one. In the submission part, the author first checks the files and submits their finished work. In the editorial process, editors assess the manuscript and deal with the copyediting issues. In the production part, the works have been proofread, and the work has been published in the print part. This important part, the *proofreading*, of publication can be defined as “the final check, formatting problems, and other small mistakes that can detract from the quality of the writing or confuse the reader” by Carol Saller (2009), the author of the book “The Subversive Copy Editor”. Additionally, Cambridge Dictionary defines proofreading as “the process of finding and correcting mistakes in the text

before it is printed or put online". Therefore, proofreading is a crucial stage of the publication process and does not allow any neglect (Fang, 2009).

Generally, proofreaders are language experts who have a good knowledge of the language of publication. There are agencies or individuals engaging in this proofreading work, and they are paid for their efforts to improve the text better for publishing. According to NCC Home Learning, proofreaders should have perfect written skills and be able to pay attention to details, as proofreading is detailed work. As technology improves, the emergence of many web tools produced by technology has led to their use in many areas of various fields. One of them is proofreading. Various text editor tools enhanced with artificial intelligence (AI) are used to control the language of written texts, such as ProWritingAid, Ginger, Hemingway Editor and Grammarly, which is the most well-known text editor. These kinds of AI-enhanced text editing tools or systems analyze and detect textual faults using machine learning algorithms. Some researchers also tried to develop some systems for editing/proofreading. For example, Wu and Wang (2020) developed a brand-new translation model-based intelligent computer proofreading system. Big data technology was used by their system to fully understand user behaviour data as well as to realize the search for the fundamental meaning and subject matter of proofreading vocabulary. They tested their own systems to meet the proofreading needs of authors, and they approved it highly improved the proofreading performance.

Grounded on the importance of proofreading and emerging technologies, the present paper tried to evaluate the effectiveness of ChatGPT as a proofreader in comparison to a human language expert and to determine whether the ChatGPT algorithm can be used as a reliable alternative to human proofreaders, by discussing its pros and cons. This research on assessing ChatGPT as a proofreader and contrasting it with human proofreaders advances AI technology, helps enhance the proofreading process, and offers insights for future research and development. Understanding the capabilities and potential applications of AI-based systems in various disciplines is becoming increasingly crucial as AI technology develops. Proofreading and other language-related jobs require a comprehensive comprehension of context, grammar, style, and other linguistic facets. This research sheds light on AI's role in language processing tasks. It promotes a greater understanding of AI's influence on human activities by investigating the possibility of AI-based proofreading systems. In language-related tasks, it discusses the significance of comprehending the capabilities, restrictions, and prospective uses of AI-based proofreading systems. Taking all of these aspects into account, in essence, in order to guarantee the quality and clarity of written content, proofreading is an essential stage. This research initiative intends to improve the proofreading process by examining the efficacy of AI-based

proofreading systems like ChatGPT. If AI systems can offer trustworthy proofreading assistance, writers, editors, and other users could benefit from time savings and higher-quality writing.

Methodology

As the nature of this study is to compare the performance of a human language expert and ChatGPT algorithm in proofreading academic research abstracts, it might be regarded as a kind of validation study. Since it includes a limited number of abstracts, it is also a small case study. The aim of the study is to determine whether the ChatGPT algorithm can be used as a reliable alternative to human proofreaders.

For the present study, seven academic research abstracts, which are published, in the press, or unpublished yet, have been obtained from their authors for research purposes. The authors voluntarily sent their abstracts for this study. Each of the abstracts was from different fields, such as Finance, Banking, Logistics, English Language Teaching, Customs, Machine Engineering, and Management Information Systems. It was the interest of this study to identify the differences among fields based on the proofreading process of the abstracts.

For the data collection part, abstracts were requested from their authors. The researcher transferred each abstract to a Word file without identifying the author's name. Then, each abstract was sent to different language experts for proofreading. Language experts were asked to make bold or highlight the changes they have made for correction. Meanwhile, the researcher also interacted with the ChatGPT at this stage and asked it, "*Can you be a proofreader for this academic research abstract?*". So, ChatGPT performed as a proofreader for each abstract. As ChatGPT do not highlight or bold any changes in the text, the researcher identified the differences between the original text and the ChatGPT corrections and highlighted or made bold changes. Afterwards, the researcher copied the proofread abstracts on the first Word document without giving any information about the proofreaders. For example, the original version of the abstract was given at the beginning of the page. Below was written 1. and the ChatGPT version was written under this title. Below was written 2. and the human proofreader version was written under this title. The authors of the abstracts did not have this knowledge, and they just saw two proofread abstracts.

All authors and an external language expert were then asked their opinions about which one is proofread by a human language expert and which one is ChatGPT, claiming their reasons. All their opinions were noted down by the researcher. Figure 1 shows the data collection and analysis process step by step.

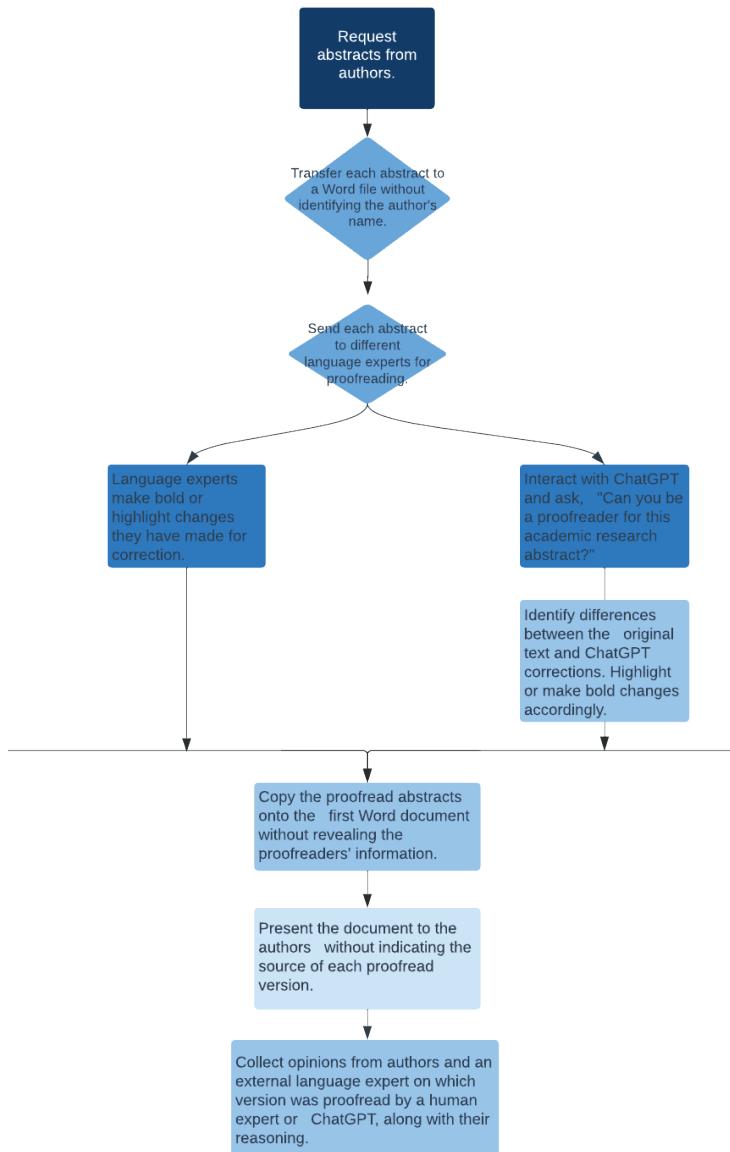


Figure 1. Data collection and analysis process

For the data analysis and interpretation stage, a grading criterion of 56 points was determined by eight people's reviews of seven texts. If all authors and the expert correctly guessed the proofreader of all the texts, a total of 56 points would result (see Table 1 for data analysis). The opinions of the authors and an external expert were read verbatim to identify key terms for analysis.

Table 1. Data Analysis Table

Abstract Number	1.		2.		3.		4.		5.		6.		7.	
Fields of Abstracts	ELT		Logistics		Engineering		Logistics		Banking		Finance		MIS	
Proofread Numbers	1.	2.	1.	2.	1.	2.	1.	2.	1.	2.	1.	2.	1.	2.
The opinions of Writers and a language expert	W1	H	AI	H	AI	AI	H	H	AI	AI	H	AI	H	AI
	W2	AI	H	H	AI	AI	H	AI	H	AI	H	AI	H	AI
	W3	H	AI	H	AI	H	AI	AI	H	H	AI	AI	H	AI
	W4	AI	H	AI	H	H	AI	AI	H	H	AI	H	AI	H
	W5	AI	H	AI	H	AI	H	AI	H	AI	H	AI	H	AI
	W6	H	AI	H	AI	AI	H	H	AI	H	AI	AI	H	AI
	W7	AI	H	H	AI	H	AI	H	AI	H	AI	H	AI	H
	E1	AI	H	H	AI	AI	H	H	AI	AI	H	AI	H	AI
TOTAL: 56 points														
Correct AI Guesses: 28 points														

Abbreviations:

ELT: English Language Teaching

MIS: Management Information Systems

W:Writer

E: Language Expert

H: Human Language Expert

AI: Artificial Intelligence

Findings and Discussion

As claimed above, 56 points of grading criteria were determined, and if all authors and the expert correctly guessed the proofreader of all the texts, a total of 56 points would result. However, it turned out that they did not find a clear difference between ChatGPT and the human reader, guessing correctly 28 out of 56.

In the present investigation, I intended to evaluate ChatGPT's and language specialists' proofreading capabilities. The abstract authors hypothesized that in terms of vocabulary, grammar, and content, language experts would surpass ChatGPT. Contrarily, ChatGPT was anticipated to do well in punctuation, capitalization, and coherence. To illustrate these differences, a sample abstract was provided, together with its original form (Extract 1) and the ChatGPT proofread version (Extract 2).

The technological changes in recent years have played a major role in changing the rules in business life. After technological innovations such as autonomous tools, the Internet of Things, and industry 4.0, the new issue that has emerged with crypto money today is Blockchain technology. A blockchain technology is a peer-to-peer digital ledger of transactions that may be publicly or privately distributed to all users and therefore is said to be decentralized and distributed. The most important feature that distinguishes block-chain-based technologies from

Extract 1: Original version

The technological changes in recent years have played a major role in changing the rules in business life. After technological innovations such as autonomous tools, the Internet of Things, and Industry 4.0, the new issue that has emerged with the crypto money today is Blockchain technology. Blockchain technology is a peer-to-peer digital ledger of transactions that may be publicly or privately distributed to all users and, therefore, is said to be decentralized and distributed. The most important feature that distinguishes blockchain-based technologies from

Extract 2: ChatGPT version (Kaya & Turgut, 2019) Logistics

The above abstract presents the results of a study comparing the proofreading capabilities of language experts and ChatGPT. It is clear from examining the excerpts that ChatGPT mostly concentrates on fixing capitalization and punctuation errors. The edited version (Extract 2) indicates how well these mistakes were corrected. The language expert who examined the abstract noted no obvious capitalization or punctuation errors in the original form (Extract 1), which is crucial to highlight. This shows that ChatGPT may have an exaggerated propensity to fix minor errors, potentially due to its extensive training on text data.

The provided extracts (Extract 3 and Extract 4) highlight a specific issue encountered when using ChatGPT for proofreading written content: its inclination to change spelling from British English to American English. The reason for this might be that the owner of ChatGPT, OpenAI, is an American AI research lab. It might be due to the fact that it has American English in its algorithm. As a result of its training data and the linguistic preferences of its creators, it is logical to assume that ChatGPT's language algorithm may favour American English to British English. Although it may seem unimportant, this spelling discrepancy might be problematic when submitting written work to academic journals that require British English. Inconsistencies across a paper could result from ChatGPT's automatic conversion of British English spellings to American English, which raises questions about whether the work complies with journal criteria. Authors using ChatGPT for proofreading while sticking to British English standards should take care to minimize this problem. They need to understand that ChatGPT may automatically change spellings to conform to American English standards. Manual checking becomes essential to maintain the spelling as it was intended to be written in British English.

This study investigated the relationship between job attitudes discussed in the literature on organisational behaviour and organisational psychology, and career plateau, a concept that has received considerable scholarly attention in recent years in the field of career management. Job satisfaction and turnover intention were used to represent job attitudes. The study was conducted to

Extract 3: Original version

This study **examines** the relationship between job attitudes discussed in the literature on **organizational behavior** and **organizational psychology** and career plateau, a concept that has **recently received** considerable scholarly attention in the field of career management. Job satisfaction and turnover intention were used to represent job attitudes. The study **aimed to** investigate how career

Extract 4: ChatGPT version

(Özçelik & Akçay, 2020) Finance & Banking

Besides, at first sight, ChatGPT was regarded as worse than a human proofreader by the authors, and most problematic proofreads were attributed to ChatGPT. However, when it was analyzed in detail, some proofreading

problems arose both by ChatGPT and human proofreaders. Three versions of an abstract are seen below (Extracts 5, 6, & 7). Extract 5 is the original abstract, Extract 6 is the ChatGPT version, and Extract 7 is the human proofreader version. As usual, ChatGPT made some corrections on punctuation, while the human proofreader changed the structure and meaning of the utterance incorrectly. The adjustments to Extract 6 show that ChatGPT mostly concentrates on fixing punctuation problems. It proves its skill at correcting these particular problems. On the other hand, as can be shown in Extract 7, a human proofreader has a tendency to mistakenly change the original utterance's structure and meaning. This draws attention to a potential drawback of human proofreaders, where unintentional changes may happen throughout the proofreading process, resulting in altered nuances and unintended meaning shifts.

compression refrigeration systems is a most promising research field. Nanorefrigerants that are mixtures of nanoparticles and pure refrigerants are new kinds of refrigerants. In this review study, the effect of nanorefrigerants on the vapor compression refrigeration system performance is presented. It is observed that the usage of nanorefrigerants in the vapor compression refrigeration systems improves the coefficient of performance up to 43.93% and 56.32% in the theoretical and experimental studies, respectively.

Extract 5: Original version

systems is **the** most promising research field. Nanorefrigerants, **which** are mixtures of nanoparticles and pure refrigerants, **are** new kinds of refrigerants. In this review study, the effect of nanorefrigerants on the vapor compression refrigeration system performance is presented. It is observed that the usage of nanorefrigerants in the vapor compression refrigeration systems improves the coefficient of performance up to 43.93% and 56.32% in theoretical and experimental studies, respectively.

Extract 6: ChatGPT version

Nanorefrigerants **that** are mixtures of nanoparticles and pure refrigerants **are which promotes** new kinds of refrigerants. In this review study, the effect of nanorefrigerants on the vapor compression refrigeration system performance is presented. It is observed that the usage of nanorefrigerants in the vapor compression refrigeration systems improves the **coefficiency** of performance up to 43.93% and 56.32% in the theoretical and experimental studies.

Extract 7: Human proofreader version (Bilen, Dağıdır, & Arcaklıoğlu, 2022) Engineering

The discrepancies between the versions that were proofread by humans and ChatGPT demonstrate the various advantages and disadvantages of each strategy. The ability of ChatGPT to correct punctuation issues can be useful for boosting the formality of the text. The greater comprehension of context, meaning, and coherence that human proofreaders may offer may be where its limitations lie. The accidental changes made by the human proofreader highlight the importance of meticulous revision and attention to preserve the text's intended meaning and organization.

A similar problem arose in another abstract in the logistics field. In logistics, there is “a mode of transportation”, and the author wrote it correctly, and ChatGPT did not change that phrase. However, the human language expert changes “a mode of ...” to “a type of...” which is not a correct phrase in the field. The author of the article attributed this issue to the human language specialist possibly not having enough domain-specific knowledge. This finding emphasizes how crucial subject matter knowledge is when editing technical or specialist texts. It serves as a reminder that despite their linguistic competence, human proofreaders could run into problems if they are unfamiliar with the terminology and norms of a specific field of work.

In this case, the author accurately detected the mistake made by the human language specialist and acknowledged its inconsistency with the logistical terminology. For accurate proofreading within specialized sectors, subject-matter knowledge and skill are essential because the terminology and terminology specific to the industry may have different meanings and implications.

Another finding is that an author and the language expert could not find any clear difference between the abstracts proofread by a human language expert and by ChatGPT, claiming that they had difficulty distinguishing which one was proofread by which one. One of the possible reasons of this situation is that an extremely sophisticated AI language model called ChatGPT, developed to produce coherent and contextually appropriate responses, was trained on huge amounts of text data. Because of this, it frequently offers ideas and fixes that seem accurate and grammatically correct, giving some people the impression that its proofreading skills are on par with those of a human expert. Another reason might be that the perceived discrepancies may vary depending on the extent and complexity of the flaws in the abstract. ChatGPT’s comments may be similar to what a human proofreader might propose if the abstract has simple grammatical or coherence problems. These situations might make the distinctions less obvious.

Overall, it was thought that ChatGPT would not be sufficient on its own without any control. Also, a human proofreader would not be able to make the necessary adjustments without having the term of field-required knowledge and reading carefully. It might be concluded that ChatGPT is more helpful in correcting spelling errors, punctuation and capitalization rules, as the language experts are not native speakers of the language, and they may lack necessary capitalization and punctuation rules. ChatGPT is also beneficial in terms of quick response and time-saving features. On the other hand, human language experts are more effective in terms of content, grammatical accuracy, and vocabulary, as they can offer suggestions for corrections or explain their changes.

When it was asked ChatGPT about the differences between ChatGPT as a proofreader and a human proofreader, it claimed that as it had been trained on a large corpus of text data and could detect standard grammar and spelling errors, its language capabilities were based on the data been trained on and might not be sufficiently comprehensible as those of a human proofreader. Besides, it lacked the ability to understand the context and tone of the articles, just like a human proofreader. Being a subject matter expert is another lack of ChatGPT, as humans can have domain-specific knowledge or expertise in the field of the article, and they can easily catch errors related to the subject matter. However, ChatGPT does not have this kind of knowledge. Human proofreaders bring their interpretation and judgement to the task of proofreading by focusing on the audience, the aim, and the tone of the article. In contrast, ChatGPT cannot bring its interpretation, judgement or ideas as its answers are generated based on the data it has been trained on. Another difference is that human proofreaders can communicate directly with the author to clarify ambiguity and collaboratively provide feedback; however, even if ChatGPT can interact with the author, it does not have the feature of communicating or collaborating in the same way as humans. Finally, a human proofreader can provide a human touch to the proofreading process by comprehending the author's feelings, complexities, and cultural allusions, which can be significant in some settings. Beyond what it has been trained on, ChatGPT is unable to comprehend emotions or cultural references.

This paper can potentially increase educators' and students' awareness of the potential and constraints of ChatGPT and other AI proofreading tools. This might enable them to make well-informed choices on using AI technologies during the writing process. It might also highlight how critical it is to have extraordinary proofreading abilities as a crucial element of academic writing. The study can identify areas where human knowledge thrives, like contextual awareness, complex language use, and spotting minor errors, by contrasting ChatGPT's proofreading output with a human language expert. This may inspire individuals to develop their proofreading abilities rather than rely entirely on AI programs.

Additionally, the study can provide insight into the particular kinds of mistakes or writing problems that ChatGPT can be adept at spotting. Scholars can use this knowledge to concentrate on areas where AI tools could be less precise or thorough. Last but not least, this study can highlight the necessity of continual analysis and advancement of AI tools like ChatGPT. It might inspire algorithm developers and academics to make improvements, address issues, and raise the precision and potency of AI proofreading tools.

For Further Studies

Examining ways to tailor ChatGPT specifically for proofreading activities is an interesting subject for further studies. Despite the fact that ChatGPT has demonstrated potential as a proofreader, improving its performance can be done by training the model on a bigger corpus of proofread texts or by introducing further linguistic rules and domain-specific knowledge. Such efforts may improve the model's comprehension of context and increase its precision in detecting and fixing grammatical faults in written text.

Future research could also compare ChatGPT to other AI models created specifically for proofreading duties. In this comparative examination, the performance of models like BERT, GPT-3, or specialized proofreading models may be assessed. Researchers can acquire a thorough understanding of the benefits and drawbacks of various AI proofreading models by analyzing their strengths and limitations.

It would be helpful to carry out domain-specific evaluations to deepen our understanding of ChatGPT's performance as a proofreader. This requires evaluating the model's performance and contrasting it with human proofreaders in particular fields or businesses, including technical writing, law, or medicine. By examining proofread writings from diverse domains, researchers can learn more about how ChatGPT and human proofreaders handle domain-specific terminology, technical terms, and linguistic traditions.

The pros and cons of ChatGPT and human proofreaders can be fully understood by comparing the types of errors produced by each. Researchers can uncover common problems experienced by AI models and human proofreaders alike by looking at linguistic trends and specific faults made. This analysis can guide the creation of focused enhancements for both strategies, such as improving ChatGPT's comprehension of grammatical rules or giving detailed instructions to human proofreaders to fix recurrent errors.

To successfully integrate AI-based proofreading systems, it is essential to comprehend user views and preferences regarding ChatGPT and human proofreaders. Writing, editing, and other participants can be surveyed or interviewed to learn more about their opinions on the efficiency, reliability, and general satisfaction with AI-based proofreading systems against human proofreaders. The design and deployment of AI proofreading systems that meet user needs and expectations can be influenced by this research.

An interesting study might be done to examine the possibilities for hybrid approaches to proofreading that combine the advantages of ChatGPT with human proofreaders. This approach might involve using AI algorithms for preliminary proofreading tasks before having human proofreaders examine and improve the AI system's ideas. Examining the efficacy and efficiency

of such hybrid methods may result in creating collaborative proofreading workflows that combine the advantages of AI and human knowledge.

It is crucial to consider the ethical risks of depending only on AI as the use of AI-based proofreading systems increases. Research in this field should look into any biases in the suggestions made by the AI model and consider how to correct them. Studying how AI-based proofreading affects employment and job responsibilities in the proofreading sector can also aid in establishing ethical and inclusive standards.

Further investigation could be conducted by expanding the evaluation to include languages other than English. Finding out how successfully ChatGPT and human proofreaders handle texts in various languages might reveal particular difficulties and intricacies in multilingual proofreading duties. This study can aid in the creation of AI models that work well in a variety of situations.

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Chapter 9

EVALUATION OF THE DEVELOPMENT AND IMPORTANCE OF THE GENDER CONCEPT IN EARLY CHILDHOOD IN THE CONTEXT OF BRONFENBRENNER'S ECOLOGICAL THEORY¹

Merve KİRPİTCİ²

Nalan ARABACI^{2,3}

1 This study was presented as an oral presentation at Ordu University Social Sciences Graduate Student Symposium on May 17, 2022.

2 Ordu Final Okulları, 0000-0003-4901-7164

3 Dr. Öğr. Üyesi, Ordu Üniversitesi, Eğitim Fakültesi, Temel Eğitim Bölümü,
Okul Öncesi Eğitimi Anabilim Dalı, 0000-0001-9811-349X



Introduction

One of the most important and critical periods in an individual's development is early childhood. Growth and development are quite rapid compared to other periods and form the basis of a child's learning, behavior patterns, creativity and thinking skills later in life. Early interventions in case of a possible problem in this period can have a lasting effect on children's thinking and behavior (Tunçeli & Zembat, 2017). Considering the social development of the child, the preschool period is the period in which children interact most with their environment. The first interactions, which start in the family from birth, encompass a wider social environment, including teachers and peers, as the child grows up and reaches school age. Many factors affect the acquisition of social behaviors. The child's individual differences, family structure and personality traits are some of these factors. Behavioral deficiencies in the social development of the child can cause many negative situations such as aggression, disagreements in peer relations, psychological problems and incompatibility in the classroom, especially in school success. In order to prevent such problems, it should be ensured that the child's behavioral patterns, adaptation to the society, interaction with the environment should be improved, and thus his social development should be positively reinforced (Karaca, Gündüz, & Aral, 2011).

It is very important to examine the concept of "gender" in the early childhood period, which is the most ideal period in terms of gaining values, attitudes, perspectives and behavioral patterns, in which the basis of human life is formed. In children's books and children's films, girls are faced with more discriminatory practices than boys, women are increasingly exposed to abuse and violence, popular culture shapes children's lives and preferences, gender roles are adapted and promoted in the media. In today's world, where traditional roles are reinforced in their content, it is extremely important to know the development of gender and to describe it appropriately (Yağan Güder, 2014).

In this study, it is aimed to examine in detail how the child's social development and gender perception in early childhood affect and shape a child from the closest environment to the farthest environment in the context of the Ecological Theory developed by Bronfenbrenner. In line with this purpose, "How does the socialization process take place in early childhood?", "How is the relationship between ecological theory and social development? and "How is the formation of the concept of gender in the context of Ecological Theory?" answers to the questions were sought. From this point of view, the effects of concepts such as family, peer circle, school and teacher, mass media, geography, culture and law in the ecological system layers on the formation and development of gender perception, together with the important stages and interactions in the social development of the individual in the context

of the relevant sub-objectives, were examined. The data were obtained by using the literature review. Literature review is used as a method that helps to understand the situations related to the research problem and to put the research into a historical perspective, depending on the collection of data by examining the existing sources and documents on a certain subject (Karasar, 2005). Various suggestions have been made considering that this study will guide educational programmers and administrators, teachers, experts working with children in various fields, prospective teachers and specialists, parents and researchers who want to work in this context.

Social Development and Socialization Process in Early Childhood

Since man is a social being, he spends his whole life in order to adapt to and integrate with his social environment (Temiz, 2019). Social development is a process that includes the interpersonal relationships, communication and behavior patterns of individuals from birth to adulthood and aims to maintain harmonious relations within the society (Gültekin Akduman & Koyutürk Koçer, 2021; Megep, 2007). Individuals develop various reactions to the situations they encounter during their social development and some of their innate equipment accompanies this process. In this context, it is important to spend the pre-school period with the most appropriate and productive lives, as in the other phases of individuals' lives, and to support children to live a quality life by interacting with rich stimuli (Küçük Şahin, 2018; Taşlık, 2019).

Social development, which is one of the important development areas in early childhood, is affected by many factors. From the moment they are born, children communicate with their environment in order to adapt to the outside world. They socialize by learning the characteristics of the society they live in. Early life experiences and experiences determine the quality of social relations in later ages (Okyay, 2021). Social relationships and roles change significantly as children participate in activities in the school setting and establish relationships with peers and adults outside of their families (Eccles, 1999). In this context, the main factors affecting the social development of the child are explained below.

Family: The family, which is the first communication environment of the child, affects his/her first social life, development and social adaptation. The family shapes many characteristics of the child, especially the physiological and social aspects. The family has a great influence on learning, transferring and keeping the culture alive. Family attitude is very important on the personality development and behavioral patterns of the child (Özaslan & Gültekin Akduman, 2018). In a way, children are the mirror of their parents and they carry traces of their families in the formation of their personality. While children learn by observing their parents, they model them (Özdemir et al., 2012). In this process, gender inequalities and gender roles are reshaped in

the family. Children first learn what the concepts of girls and boys mean in the family, and this causes stereotypes based on gender. Children's perspectives on gender roles are influenced by family attitudes and upbringing styles, and most families consciously or unconsciously expect their children to behave in accordance with their gender roles. Thus, families transfer their perceptions based on gender directly or indirectly to their children (Yagan Güder & Güler Yıldız, 2016).

Temperament: Individuals are born with various tendencies towards different behavior patterns. Researchers call these tendencies "temperament". Temperament can also be defined as emotional states that change and transform according to people's lives (Burger, 2006). Temperament, whose origins are based on genetic factors, includes the processes of sensation, association and motivation underlying emotional skills and habits (Arkar et al., 2005; Okyay, 2021). In this respect, temperament is unique to the individual, but it can also be affected by experiences. Experiences in early childhood that negatively affect social development lead to a stress response in young children (Cantekin & Gültekin Akduman, 2021). From this point of view, temperament is a factor that has an impact on social development.

Attachment Quality: Emotional care is as important as physiological care in the postpartum needs of individuals. At the beginning of the behaviors in the emotional care process, "attachment" comes first. The behaviors that infants exhibit in their interactions with their parents in the first nine months of their lives are called attachment. The underlying emotion of attachment is trust. Trust is based on closeness to the caregivers of babies (Pekdoğan, 2021). The sense of trust and attachment gained during infancy form the basis of relationships established with other individuals throughout life and shape social development (Soysal et al., 2005; Yoleri, 2021).

Birth Order and Spacing: Adler emphasized the importance of the "psychological birth order" by stating that even if children are born in the same family, they are not born in the same environment and under the same conditions, and that the second-born child is born in a different psychological environment than the first-born child. Psychological birth order refers to how individuals perceive and position themselves in the family. As a result of many studies, it has been observed that there is an intense relationship between family relations and birth order (Kalkan & Odacı, 2010). It is thought that the birth order of individuals and the behaviors they display according to their perception of inadequacy are related to the attachment styles and social relations of the individual in their close relationships (Ekşi, Sevim & Kurt, 2016).

Number of Siblings and Relationships: The relationship between siblings is a much longer-term relationship than with other members of the family. The

reason why the sibling relationship is kept different from other relationships is that this relationship prepares the two individuals for many critical stages of their lives with an emotional, physical and psychological bond (Ogelman & Erten Sarikaya, 2014). In families with many children, parents may not be able to take care of their children equally and adequately, while in families with one child, an undisciplined and unruly environment is offered to children (Demir, 2020). In some studies, some developmental and behavioral problems seen in early childhood are associated with the number of siblings. It was observed that there was a significant relationship between the number of siblings and the adjustment problems of the children. The increasing number of siblings brings along adaptation and behavioral problems, which negatively affects social development by causing conflicts between siblings and within the family (Eratay, 2011).

Peer Relationships: Peer groups where the first social interactions take place after the family are important steps of socialization (Okyay, 2021). As a result of the researches, it is seen that the peer circle has many effects and functions in the lives of individuals. Peer relationships are also of great importance in the pre-school period, where development is the fastest. Peer relations are the interactions that individuals of the same age and developmental level establish with each other in the light of a similar lifestyle, past, perspectives, tastes, attitudes, and ways of perceiving life (Gülay, 2009). Harmony and efficiency in peer relations bring along cooperation and effective communication skills (Şen & Özbey, 2017).

Play: Play, in which the child takes part willingly and with pleasure, is an indispensable part of the child's life. For a child who likes to play with others, play is one of the most effective ways to acquire social skills (Okyay, 2021). The game has an important place in the personality development as well as the education of the child. Children's ability to make sense of life, their self-perceptions, and their perspectives on events and people emerge through play (Ulutaş, 2011). The child learns and reinforces life skills through play. The game teaches children about life, thinking skills, sharing, helping each other, empathizing, creativity, problem solving skills and behaving in harmony in their social relations (Durualp & Aral, 2010).

School and Teacher: Pre-school education is a very important educational step in terms of supporting the developmental areas of children, increasing their self-confidence, instilling a sense of responsibility, discovering their talents, developing effective communication skills and raising a happy individual. Preschool education institutions provide rich stimuli to children, support their development areas, create a common educational environment for children from different socioeconomic families, support their academic skills, and provide harmonious peer relations and effective communication skills (Dinç, 2002). When there is a negative situation in the child's life and development

areas, the development areas of children are supported in cooperation with the school-family and with multidisciplinary approaches, and an environment where the child can be more productive is prepared (Özbesler & Duyan, 2009). In this regard, preschool teachers have a vital role in the development of the child as well as the preschool education program (Hatipoğlu & Kavas, 2016). It is known that children who establish a strong, secure and well-founded relationship with their teacher develop more positive behaviors and are more successful socially and academically. In the insecurely attached teacher-child relationship, problematic behaviors such as behavior and adaptation problems, indifference towards school, aggression, bullying and learning difficulties can be seen. The quality of the relationship between the teacher and the child is the determinant of the academic and social adaptation skills of the children throughout their education life, starting from the pre-school period (Kıldan, 2008).

Social Adaptation and Social Skills: Humans are social beings and tend to be involved in social relations and communications with other individuals at every stage of life. The socialization of the individual begins in the womb and continues throughout life (Gander & Gardiner, 2007). Social adaptation is one of the most important skills for healthy social development. The rate of aggressive behavior of children who have developed problem-solving skills and can adapt socially is very low. Having positive and qualified social skills enables children to use their problem-solving skills effectively (Onur Sezer & Bağceli Kahraman, 2021).

Media: Digital media, which develops with new and different content every day in today's world, is very interesting for children as well as adults. Children use digital media to learn about themselves and the world around them, to have fun and to feel good about themselves. It is known that media tools such as computers, tablets and smart phones, which children start to use from the pre-school period and become more widespread in the following periods, have many harmful effects on children in terms of social, physical, spiritual and academic success (Gündoğdu et al., 2016). Children who spend a long time in front of the screen spend more time in the media than other activities, so their mental, physical and social development is adversely affected. Health problems such as posture disorders, physical deficiencies, poor quality sleep and obesity can be seen in children (Okyay, 2021).

Many theories have been developed about the socialization process that affects the life of the individual positively or negatively from birth. The Ecological Theory is explained below, in which the relationship between the biological characteristics of the child and environmental factors is revealed and a strong emphasis is placed on environmental effects in the socialization process of the individual.

Ecological Theory

By arguing that there is a mutual interaction between the individual and the environment, Bronfenbrenner developed Ecological Theory to express the potential of the individual-environment relationship to affect each other. This theory looks at a child's development in the context of the system of relationships that make up his environment. Bronfenbrenner, while describing this theory, states that each layer of the complex environment has a significant impact on the child. In addition, Ecological Systems Theory is also called "Bioecological Systems Theory" because the primary environment that affects the child's development is his own biology. Accordingly, the interaction between the child's maturing biology, close family/community environment and factors in the social environment directs the child's development by feeding it. Therefore, changes or conflicts have the potential to affect other layers as well. Therefore, when examining a child's development, not only his immediate environment but also his interaction with his social environment should be considered (Paquette & Ryan, 2001). Because, from an ecological point of view, the development and learning of the child is explained by the chain of interactions that develop and change between the child's close and distant environment (Halgunseth, 2009).

Bronfenbrenner's "Ecological Paradigm", which was first put forward in the 1970s, is the most widely used among ecological models. Bronfenbrenner's Ecological System Theory emphasizes that the child's development and his/her environment interact with each other and this interaction continues throughout life. Bronfenbrenner argues that developing individuals are active participants in the learning process. In this theory, the development of the individual is explained by the system of relations around him and consisting of intertwined layers (Kopan, 2019). In the ecological model, the processes of continuity and change in the biopsychological characteristics of people, both as individuals and as a group, are discussed. This phenomenon spans a successive historical time throughout life (Bronfenbrenner & Morris, 2007). Ecological theorists, including Bronfenbrenner, emphasize the importance of examining the environment and conditions in which children live in order to create policies in line with productive and beneficial programs in order to understand the behavior of children and to follow and make sense of their development (Daniels & Shumow, 2003). Bronfenbrenner's most important work is Ecological Systems Theory, in which he defines four concentric systems: micro, meso, exo and macro systems. Later on, he added the fifth system, the chronosystem, to his theory (Härkönen, 2007).

According to the theory, the closest environment that affects the development of the individual is the *microsystem*. The interactions with which the individual is in direct communication (child-parent, child-peer, child-teacher, child-adult) constitute the microsystem (Kopan, 2019). The

microsystem provides information about the environment that the child is in at that moment, including the home and school of the child (Elliott & Davis, 2018). The microsystem is the layer closest to and contains the structures with which the child interacts directly. In this layer, the child is not only a passive receiver, but also helps to create environments and relationships between these environments. Relationships affect both sides from the child to the other party and from the other party to the child. In other words, while a family can affect the behavior of the child, the child can also affect the family. Bronfenbrenner calls these “double effects” and shows how they occur across all environmental layers. The interaction of the structures in a layer with different structures in the layer and the interaction of these structures with the structures in other layers are the key to this theory. At the microsystem level, bidirectional effects are most common and have the greatest impact on the child. However, interactions in the outer layers can also affect the internal structures (Christensen, 2010; Paquette & Ryan, 2001).

The *mesosystem* encompasses the connections and processes between two or more spaces involving the developing individual. In short, it is a system of Microsystems. For example, it is about interactions and mutual relations between microsystems such as home environment, school environment, living place, friend groups (Ashabi & O’Neal, 2015; Elliott & Davis, 2018; Kopan, 2019). The mesosystem provides the connection between the structures of the child’s microsystem, such as the connections between the child’s teacher and parents, between the school and the neighborhood (Paquette & Ryan, 2001).

The *exosystem* describes the larger social system in which the child does not interact directly. This layer includes factors such as local government, parents’ workplace, school management, which the child is not directly in, but which is composed of structures and ideologies that are settled in the society and that affect the child’s development. The structures in this layer interact with some structures in the microsystem and affect the development of the child. Parent workplace programs are an example. In other words, exosystems describe both formal and informal social structures or environments in which a child is not directly involved but may have indirect effects on a child, such as a parent’s workplace or extended family (Elliott & Davis, 2018; Kopan, 2019).

The *macrosystem* is considered the outermost layer in the child’s environment. Although this layer is not a specific framework, it consists of cultural values, traditions and laws (Paquette & Ryan, 2001). The macrosystem can be thought of as the “social blueprint” of the social norms of a particular culture and consists of the values, belief systems, lifestyles, opportunities, traditions and resources that this social plan contains. It is thought that the macrosystem affects not only the individual but also micro, meso and exosystems (Kopan, 2019).

The *chronosystem* encompasses the dimension of “time” in relation to a child’s environment. Elements in this system can be external, such as the timing of a parent’s death, or internal, such as physiological changes that occur in a child’s life (Paquette & Ryan, 2001). Chronosystem, apart from the social and historical time dimension of the macrosystem in which the individual is involved throughout his life, also refers to the time dimensions of the individual in the short and long term throughout his life (Kopan, 2019).

The Development and Importance of the Concept of Gender in Early Childhood in the Context of Ecological Theory

In the first months of life, the perception of gender develops as babies discover their bodies and become aware of themselves. When babies are seven to eight months old, they start to explore their hands and fingers and enjoy touching their genitals. In this period, giving babies the opportunity to be sensitive and touch their genitals while they are cleaning the gold, without exaggeration, enables the baby to develop healthy feelings about sexual development (Kaçar, 2019). Kohlberg believes that gender identity is a basic concept related to the individual’s body and therefore develops by following the same path as the comprehension of other physical objects, which Piaget and other researchers who followed in his footsteps emphasized. argues that it is parallel. Kohlberg also states that the child’s level in the construction of gender identity reflects the cognitive development level exactly (Zembat & Keleş, 2012). The period when children’s gender awareness is formed is around the age of two. It is stated that children at this age can distinguish genders as male and female, and choose toys suitable for their own gender when choosing toys. When they reach the age of two and a half, it is stated that children have knowledge about the roles of adults, their physical appearance and the items they use. At the age of three, it is stated that children know their own gender, but they cannot yet perceive that gender is permanent. At this age, children distinguish gender based on the person’s physical appearance (features related to physical appearance, such as the length of hair or the clothes used). In this period, children’s gender stereotypes are formed against toys, activities and things. Children between the ages of three and five seem to be able to grasp that gender is immutable. In addition, stereotypes about the emotional and personality traits of women and men are formed in this period. There are strong stereotypes in children’s toy choices, game preferences and color preferences at this age. In addition, children at this age make their friend preferences according to their gender. Children at the end of the preschool period have a clear grasp of the invariance of beliefs and behaviors about gender. Thus, with the characterization of children as boys and girls in society, children also begin to discover the cultural side of gender (Kaçar, 2019).

While the definition of the concept of gender does not differ according to societies, the concept of “gender” may differ from family to family, culture

to culture. Which gender individuals will have is affected by the gender they were born in. The characteristics of the child's gender are determined by knowing the biological sex of the child (Karabekmez et al., 2018). The concept that explains how people are perceived in society because of their gender, how men and women should look and behave, and what roles they should assume is called "gender" (Yağan Güder, 2014). Gender is used to describe people's gender-specific behaviors, beliefs, and value judgments. The first to introduce this concept is the American scientist Robert Stoller. Stoller, in his work titled "Sex and Gender", which he wrote in 1969, used the concept of gender to express the differences in the characteristics of gender types of women and men. In addition, it is seen that Ann Oakley used this concept for the first time in the sociological context in her work titled "Gender, Gender and Society" in 1972 (Gür, 2020).

Gender is very important because it has a special meaning for individuals and has a general dimension for society. Because the concept of gender not only affects the duties and responsibilities of individuals in society, but also determines the degree to which they benefit from the opportunities offered to them (Kardaş, 2021). Gender roles are based on the different expectations of individuals, groups and societies from individuals based on their values and beliefs about gender (Blackstone, 2003). Researchers with a social interactionist perspective see the concept of gender as a system of meanings operating at individual, interactional, social and structural levels (Crawford, 2003). Gaining a perspective on gender enables individuals to better understand themselves and their relationships with their environment (Öztan, 2019). In this context, gender is defined as the cultural aspect of gender. In society, from a young age, children are taught gender-appropriate or unsuitable behavior patterns, personality traits, choice of games, toys and professions. It is stated that with the socialization process, the meaning of being a "girl" or "boy" begins to mean much more than biological differences (Kaçar, 2019). Patriarchal systems that define men with their dominant roles and women with their subordinate roles and put them in a certain mold cause social inequality. Perception of gender and attitudes towards this perception; It is of great importance because it is one of the main factors that affect and limit gender identities in every field. Gender constitutes the source of the roles attributed to women and men, the appraised value, the responsibilities undertaken and the inequality between the genders. Almost everywhere in the world, women have been the biggest victims of these gender inequalities. Examining and evaluating the perception of gender within the framework of scientific research is of great importance in terms of preventing gender-based inequalities (Kahraman et al., 2014).

According to Bronfenbrenner's Ecological Theory, the closest environment that affects the development of the individual is the *microsystem*. The effect of

the family institution, which is located in the microsystem layer and in which the child is born and first communicates, on the formation of the perception of gender is very strong. The family carries a very important function that ensures the adaptation of the child to the society and shapes the relations and behaviors with other people. In this respect, the information that the child receives from his/her family during the socialization process becomes a part of his/her personality and affects his/her lifelong preferences, behaviors and attitudes (Gür, 2020). Gender is an important tool for questioning the gender-based division of labor between men and women in the family environment. Gender-based division of labor limits women to duties such as taking care of family members and housework. Since children take the events they observe in the family as a model for themselves, they think that this is the only duty of women, and their perceptions of gender are shaped accordingly (Kahraman et al., 2014). Like many social institutions, the family has undergone significant changes in its type, structure and functions over time. While the family was an economic production unit in pre-industrial societies, it ceased to be an economic unit in post-industrial societies with the separation of home and workplace. This meant working outside and participating in production activities for men, while for women it meant staying at home because they could not find a job all the time. For this reason, men, as property owners, have had a greater say in both the private and public spheres. According to the gender-based division of labor in the family, it is tried to eliminate the perception of inequality by showing that it is a natural function for the man to work outside and the woman to undertake the reproduction at home free of charge. However, this situation emerges as a gender-based inequality in economic cooperation and reproduction. In today's societies, with the development of technology, a judgment that the time allocated to these works has decreased and that men in the house are also responsible for these works is an illusion. Men only help women with home technologies. Women do routine tasks that require repetition, such as laundry, dishwashing, house cleaning and cooking. Men, on the other hand, do non-routine, intermittent chores such as repairing and going to the grocery store. With the separation of home and work places with industrial production, women were imprisoned in the private sphere and faced obstacles in accessing their rights in the public sphere. Jobs such as childcare, cooking, and cleaning that women do in the private sphere, that is, within the family, are devalued, and these jobs are naturally considered as works done in return for love. The work done by men outside is considered productive and allows men to have more rights in the public sphere. In summary, responsibilities are usually determined by gender in the traditional family structure. It is stated that men mostly deal with jobs such as repair and garden maintenance, while women deal with jobs such as cleaning, child care and cooking. Therefore, the roles and duties of parents in the family also determine the responsibilities that the child will assume at

home. It is stated that in houses where traditional gender roles are adopted, girls are interested in domestic work, while boys are interested in work outside the home (Kaçar, 2019).

When the effect of peer groups, one of the structures in the microsystem layer of Ecological Theory, on the formation of gender perception is examined, it is seen that friendship relations involve a developmental process with age and friendships are first established with people of the same sex, and then relations are established with friendships of the opposite sex. The number of friends made is very important in terms of development. Because the number of friends and the quality of friendship change with age. According to some researchers, friendship relations are related to the situation of getting crowded. In other words, children first make friends of their own gender, and then these friendships prepare the ground for the formation of friend groups of mixed genders. After this stage, close friend groups begin to form (Bayhan & Işitan, 2010). Groups of friends help to reinforce the child's concept of gender. Gender roles taught in the family continue to consolidate in the social environment. Friends teach each other feminine or masculine roles and behaviors during the game. In games played by boys and girls together, girls play the role of mother and boys play the role of father. Boys play competitive games while girls play games with less competition and more rules. While the friendships of boys are more superficial and the number of friends is higher, the friendships of girls include more sincere and sincere relationships and they have a certain number of friends (Kaçar, 2019).

Another structure in the microsystem layer of the theory, which is at least as important as the family in the child's life, is the school. By transferring the values that are desired to be acquired together with the existing values in a society, schools both ensure the reproduction of existing values and provide individual and social change by influencing the questioning of these values. The school, and therefore the education system, reproduces the inequalities that exist in the formation of gender perception. Just as women experience discrimination in accessing education, they also encounter sexist practices within the school curriculum and culture when they access education. The division of labor and hierarchy in school is one of the indicators of gender inequality in education. For example, while male teachers concentrate more on the upper level of education and in areas such as mathematics and physics, the fact that female teachers concentrate in lower classes such as teaching literacy is one of the indicators of this inequality. The values and orientations adopted during the school years are effective in the formation of this situation. Concentration of girls in language and social and boys in science and technical departments in choosing a field in secondary education causes women to stay away from fields such as science and engineering in the future. This gender division of department selection reproduces the gendered

division of labor. The fact that the number of female administrators is low in the division of labor in the school, the division of work in the school according to gender (such as the assignment of girls to cleaning, boys to control and order) ensures the consolidation and reproduction of social differences. At this point, textbooks also play an active role. Starting from primary school, textbooks teach children how to be a man and a woman. In the textbooks, women are shown with their spouses, children and housework, while men are shown as busy with their work and responsible for meeting the expenses of the house. In this case, while women are given a "passive" identity, men are given an "active" identity. As a result, women are defined as dependent on housework, children and their husbands, while men are defined by their jobs or professions (Gür, 2020). School is an important ground where gender identities are established through both political discourses developed through the society and transmitted through the media, and discourses about adolescent sexuality. The official culture of the school, which operates on the assumption of genderlessness, based on the distinction between private and public, is actually a field with an open and hidden sexual regime where sexuality is both nowhere and paradoxically everywhere. The sexual conflict and tension at school both takes shape in the context of the processes of resisting the official norms and rules of the school and restructures it (Sayılan & Özkanç, 2009).

Teachers, who are in the microsystem layer and one of the most important components in the school environment, also have strong effects on the formation of gender perception. "Student" is the social identity of the children in the classroom, and under this social identity is a child or a young person. The individual has an existence that transcends and encompasses student identity. The teacher, who cannot see beyond the student identity of the child in front of him when he enters the classroom, has difficulty in being a teacher who "develops the individual". What these types of teachers understand from education and teaching is to put the "students" in the classroom into the patterns that society and themselves know (Cüceloğlu, 2020). Teachers are one of the important people who influence children in many ways and convey gender stereotypes to them. In the report "Gender Differences in Educational Outcomes" prepared by the European Commission, it was stated that teachers treat students equally. However, the situation is not as the teachers stated. While teachers support girls' "passivity and adaptability" behaviors inside or outside the classroom, they support boys' "independence and individuality" behaviors. In addition, the fact that boys are naughty is ignored and it is stated that this is a natural process (Kaçar, 2019).

In the light of all this information obtained from the literature, it is seen that various structures within the microsystem layer of Ecological Theory significantly affect the child's perception of gender. Thus, the continuity of perceptions and stereotypes regarding the concept of gender formed in the

child through the mesosystem, which is the second layer, which expresses the interaction of the structures in the microsystem layer with each other, is reinforced.

The legal system, laws and policies, which are included in the *exosystem* and *macrosystem* layers of Ecological Theory, have a very important place in terms of the concept of gender. Local governments, municipalities have a great importance in developing a policy sensitive to gender perception and providing services due to proximity to the public and service definitions. In academic studies on the adoption of sensitive approaches related to gender, it is seen that the duties and responsibilities of local governments and municipalities on this subject are mentioned. Political and legal developments, especially after the 2000s, are interesting for Turkey in this sense. As a result of the new regulations, various social, legal, political and economic powers have been given to local governments and municipalities to develop a gender-sensitive, sensitive policy approach. Therefore, municipalities are expected to adopt this sensitive approach. However, there is no enforcement and supervisory law or regulation that provides a standard policy on this issue yet. It is also seen that this point of view and the expected policies are not yet fully understood by the political structures and local governments. For this reason, first of all, the duties and responsibilities of local governments in realizing these policies should be clearly stated and their authorities should be revealed (Sumbas, 2013). It is one of the most basic principles of democratic societies that individuals in the society can participate equally and freely in all areas of social life without being subject to any restrictions. Gender equality basically points to the necessity of women and men in a society to have equal rights and opportunities without being discriminated against because of their gender and sexual identity (İçli, 2017).

According to Ecological Theory, when the effect of mass media and media on the formation of gender perception in the macrosystem layer that represents the cultural values, traditions, laws and ideologies that exist in the society, although the child is not directly involved, It is seen that he transmits many behavioral codes related to his perception. Children have also become consumers today. Therefore, each information in the content of the advertisements affects the identity formation and way of thinking of children (Gündüz Kalan, 2010). Mass media are frequently used in the adoption of traditional gender roles. The leading actors of the TV series are usually chosen among women with feminine features and their physical appearance. However, it is seen that there is usually a man in the managerial position, and a very well-groomed woman in the assistant role. In addition, it is emphasized that men look more attractive as they get older, while women are encouraged to look younger. Individuals are exposed to these perception creation studies since childhood. The situation in cartoons is no different than in TV series.

In the contents, it is seen that there are princesses waiting to be rescued by the prince. In advertisements, it is seen that women are extremely happy while taking care of the housework, girls help their mothers with housework, and men come to the table prepared for them and eat or put on their cleaned and ironed clothes and go to work. As a result, studies are carried out for individuals to adopt gender-based division of labor, gender-based stereotypes, and gender roles through media tools. For this reason, mass media emerges as an important factor that affects and shapes the perception of gender (Kardaş, 2021).

Another element in the macrosystem is geography. Researchers state that geography is one of the most important factors affecting the perception of gender. Cities in geographical regions can be places where inequalities are experienced in terms of components such as race, class, ethnicity and gender. There are regions where the patriarchal family structure maintains its dominance to a large extent. For example, regarding the gender order in the Southeastern Anatolia Region, which is discussed in the studies, it is stated that there is a male-dominated understanding in the region where women act according to the society and in accordance with the society. The place of women in society feeds inequality between the sexes and constitutes the mechanisms by which gender is reproduced. It is emphasized that an ideology in which women are in the secondary class and dominated by men has been adopted. While emphasis is placed on the education of boys, there is an opposition to the education of girls because of their secondary position. It is also seen that there is a belief that girls and boys should not be in the same environment, depending on the geography they live in. Studies support that stereotypes differ according to the geography (Kardaş, 2021).

The concept of culture, which is one of the concepts in the macrosystem, affects the perception of gender. Culture can be defined as the social accumulation that includes both nationality and universality, which includes all concrete and abstract institutions in a society. When the concept of culture is examined in terms of gender roles, there are some mutual determinations. While gender stereotypes create culture, culture ensures the interpersonal and intergenerational transfer of these patterns. In this context, language, as the descriptor of culture, is the carrier of all cultural characteristics of that society in its structure. While doing this, he uses some forms of expression that are the tradition of oral culture. Proverbs and idioms come first among these forms of expression. These forms are important in terms of conveying the culture and reflecting the society's perspective on life. Proverbs and idioms are in a reciprocal relationship with each other in terms of semantic and situational aspects. For example, "A thousand people want a girl, one person gets it." The idioms "wanting a girl" and "having a girl" are used in the proverb. Likewise, "Don't give it to the shepherd, the girl either herds sheep or lambs."

The proverb includes the phrase “to give a girl”. While proverbs deal with a stereotyped judgment in the form of advice, idioms also provide information about the situationality of the judgment in question. In this context, the society teaches the roles that the culture expects by labeling children as boys and girls. Individuals tend to develop stereotypes about groups, and it is seen that there are strong stereotypes about gender discrimination. The proverbs and idioms examined in the context of “daughter” are often related to marriage, sharing the same fate with the mother, helping the mother, pressure, etc. Proverbs and idioms examined in the context of “son/boy” appear with the themes of helping the household, carrying the father’s profession to the future, being a source of bravery and pride. “The boy learns from the father (father) to cook a table, the daughter learns to cut from the mother.”, “Let the one who gives birth to a son be proud, let the one who gives birth to a daughter be beaten.”, “Whoever does not beat his daughter, beats his knee.”, “Let the tree green, bring fruit, let the boy grow and bring bread.”, “Man should know how to bring, women should know how to suffice.”, “Man is a flood, woman is a lake.”, “If a woman’s candlestick is gold, it is a man who will plant his candle.” proverbs are just some of the examples that can be given in the context of this subject (Özkan & Gündoğdu, 2011). When proverbs and idioms are examined, this distinction is clearly seen.

Conclusion and Recommendations

One of the periods when an individual’s life is most open to development and change is early childhood. The experiences spent in this period are of great importance for the child. The place and importance of the family is very critical in the development and socialization of children. Because the first and most interacting structure of the child is the family institution and the members in this institution. In Ecological Theory, developed by Bronfenbrenner in the context of the individual’s socialization process, interrelated layers, environments and interactions of the child, starting from the child’s most basic environment, namely his family, are examined in depth from close to far. As can be understood from these reviews, the interactions experienced by the child are not one-sided. In other words, the child and also all individuals are both affected and affected in the environment they live in. In this study, by emphasizing the importance of early childhood, attention is drawn to the fact that the concept of “gender”, which is one of the concepts at the foundation of a healthy society, is closely related and very important with the child’s holistic environment from primary relationships to more indirect relationships.

Considering that the early childhood period is a very critical period in terms of all development areas and especially concept development, first of all, parents should be the right role model for the child and they should be made aware of the child’s development and learning. It is considered

important to plan, implement and disseminate effective communication and parenting-based intervention programs for families. In order to increase the level of effective parenting, it may be recommended to pay attention to the participation of both parents in parent education programs.

Considering the important role of the school/institutional environment in supporting the child's home environment, in-service training can be given to educators responsible for the development and education of the child, child development and education specialists, psychological counseling and guidance staff, on issues in relational contexts such as socio-emotional development, sociocultural development and communication. These professionals can be encouraged to practice by preparing face-to-face or online education programs for parents.

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Chapter 10

THE IMPACT OF SOCIOECONOMIC STATUS OR SOCIAL CLASS ON COGNITIVE TEST SCORES OF CHILDREN

Turhan ŞENGÖNÜL¹

¹ Doç. Dr. Turhan ŞENGÖNÜL, Ege University, Faculty of Education,
Elementary Education Department, Classroom Education Science¹ Branch
Bornova/ İZMİR Turkey,
e-mail: turhan.sengonul@ege.edu.tr, ORCID Number: 0000-0003-4760-2204



Introduction

The research stressed the significance of parental socializing, educating and rearing behaviors and aspirations for cognitive and educational outcomes of children. Politicians were held responsible and criticized for low levels of social mobility in societies. Both theorists and researchers questioned and criticized the research evidence utilized to support dominant policy discourses in social mobility as well as empirical analyses. The present study utilized the Millennium Cohort Study to investigate the association between parents' socioeconomic status (SES) or social class and children's academic attainment during early childhood education. At this point, to what extent socioeconomic status or social class elements such as income, education, social resources of parents and parental behaviors could explain socioeconomic status or social class inequalities in children's first cognitive test points were examined and discussed. Theorists and researchers suggested that socioeconomic status or social class remained to be an important concept and that the connection between structural disparities and inequalities and gaps in children's cognitive test points cannot be easily explained with regard to parents' socializing, educating, and rearing behaviors.

The association between socio-economic disadvantages and educational consequences, and between social class backgrounds or origins and attained social class position were documented and verified through the years (Feinstein, 2003; Halsey, Heath & Ridge, 1980). Based on the comparison of children born in 1958 with those born in 1970 (Blanden, Goodman, Gregg, & Machin, 2004), the research asserted that intergenerational income mobility in societies declined while the relative social class mobility did not change (Goldthorpe & Jackson, 2007). Some theorists and researchers claimed that social mobility decreased as a consequence of abolition of grammar schools, mostly attended by children from families in middle and upper socioeconomic status or social class (Boliver & Swift, 2011). Nevertheless, emergence of political discourses in recent years tried to elucidate educational differences, inequalities and social inactivity in terms of parents' socializing, educating and rearing their children. It was stated that different parents spent different amounts of time and money, and invested in and were engaged with education at different levels so as to ensure cognitive, academic, social and emotional development and progress in their children. So, parents were criticized and blamed for their low levels of social mobility in the society. (The Telegraph, 2010). The thesis that poor children were often at a disadvantage for more than an absence of money continued to be the more debated allegation that poor parents deviated and disengaged from their responsibilities for their children, and that a modern description of poverty should take the children of such parents into consideration. It was asserted that the society once witnessed a break in the tradition of socializing, educating and rearing children, and this

thesis was built on housing estates, deindustrialization, and the increase in the number of single-parent families (Field), 2010).

This research attempted to present a critique of the research evidence that supported dominant policy discourses and it also neglected and ignored the important and crucial concept of socioeconomic status or social class. The research aimed to ensure an empirical evaluation of socioeconomic status or social class disparities and gaps in cognitive test points throughout the early years of elementary school education and also the extent to which socioeconomic status or social class disparities and gaps in these cognitive test scores could be explained by parents according to child socialization, education and rearing as well as another factors.

The Association between Political Theses and Empirical Evidence on Socializing, Educating, and Rearing Children

The British Cohort Studies and the Influential Providing of Pre-Primary Education project focus intensely on recent discussions on educational inequalities. It was indicated that “what parents did with their children was more significant than who they were” and it was expressed that child socialization, education and rearing practices were crucial for children’s initial cognitive and educational outcomes (Sylva, Melhuish, Sammons, Siraj-Blatchford & Taggart, 2004). In the process of socializing, educating and rearing children, there were continuous discussions on the concept of what parents did was more significant than who they were. It was argued that the right type of socializing, educating and rearing children, especially in their earliest years, had a greater impact on children’s future than riches, classroom education, or other mutual social determinants (Allen, 2011). It was asserted that when the number of self-confident and talented parents increased, the differences, inequalities, and gaps in cognitive and educational outcomes between children born into and living in poverty and those born into and living in riches were no longer statistically significant and it was expressed that this tendency became a new scientific law for social mobility (Cameron, 2010). It was highlighted that this unconventional thesis, based on a Demos report (Lexmond & Reeves, 2009), focused only on behavioral consequences, and it was argued that scientific research that displayed such a thesis was ineffective and its modeling strategy was disputable. Scholars defied and challenged this thesis (Kiernan, 2010). It was emphasized that social mobility was fully controlled not only by early cognitive scores but also by initial behavioral regulation.

Politicians placed more emphasis on and paid more attention to research utilizing the “parental interest” variable from the British Cohort Study70 and the National Child Development Study. It was asserted that parents’ interest in their children’s education was four times more important for their

children's recent educational achievement than socio-economic background (Feinstein & Symons, 1999). Another study revealed that a mother or father who was involved and engaged in the education of children could increase their children's chances probabilities of mobilizing out of poverty as an adult by only 25% (Blanden, 2006; Field, 2010). However, it was also asserted that this "bare fact" was generated through an uncritical interpretation of the data and that "parental involvement" was based on what teachers reported about each parent's level of involvement in their 10 or 11-year-old child. It was also expressed that teachers' had limited contact with parents at a "parents' evening" held annually towards the end of each academic year. Qualitative research suggested that few parents were really uninvolved, but many parents had difficulties in demonstrating their involvement in forms suggested and approved by teachers (Vincent, 2012).

Policy circles widely held the opinion that increasing the aspirations of poor parents was an important tool in addressing low educational attainment and increased social mobility. Nevertheless, several small-scale qualitative studies discussed the hypothesis of "poverty of aspirations" in disadvantaged children and their families (Lupton & Kintrea, 2011). Mothers participating in the Millennium Cohort Study reported higher educational aspirations for their seven-year-old children, with as high as 97% of them expressing that they preferred them to attend and finish university (Hansen & Jones, 2010).

It was asserted that the research evidence did not support the more exaggerated arguments about child socializing, educating and rearing of parents, and the inequalities and gaps in cognitive and educational outcomes of children. An analysis of the cognitive and behavioral outcomes of three-year-olds revealed that what parents did was important and helped to explain the income trend or change in children's cognitive, educational, and behavioral outcomes; however, it was not a tool that fully explained it (Ermisch, 2008). Another study obtained similar results and estimated the effect ratio of childhood disadvantage for cognitive, educational and behavioral outcomes at age five, and argued that 40% of the ratio impact of childhood disadvantage could be explained by child socialization, education and rearing practices based on a composite measure and the remaining 60% could not be explained in that way (Kiernan & Mensah, 2011). Researchers indicated that family resources and child socialization, education and rearing practices were strongly interrelated; moreover, they pointed to the importance of such parenting practices. It was also revealed that such processes, characterized by constant and consistent application of rules and regularity, were associated with children's positive cognitive and behavioral outcomes (Washbrook, 2011). Qualitative studies explored socioeconomic status or social class differences in child socialization, education and rearing practices. Lareau (2003) made a differentiation between middle SES or middle social class style

of socializing, educating and rearing children, which she called “concerted cultivation”, and the working-class parental style described as “achievement of natural growth”. Concerted cultivation of their children was associated with the cultural capital of parents and involved conscious, deliberate and persistent efforts of parents to foster, nurture and enhance their children’s talents through a broad array of organized activities, such as cultural and sporting events, which often required extensive time, money and investment from parents (Vincent & Ball, 2007).

It has been asserted that addressing various aspects of parents’ interactions with their children merely as a form of child socialization, education, and rearing can eventually result in an incompletely and insufficiently theorized approach which ultimately throws little explanatory light. While some researchers acknowledged what working-class families did to increase and enhance educational attainment of their children (Siraj-Blatchford, 2009), an emphasis on the way parents socialized, educated, and reared children could nurture and support a crude and incomplete view which criticized and blamed low-income parents for failure of their children (Vincent, Ball & Braun, 2010). This stance and perspective overlooked and neglected the effect of parents’ resources not only on the children’s socializing, educating and rearing practices themselves, but also on the cognitive, educational and behavioral outcomes of such parenting practices. Children’s socializing, educating and rearing processes could be adversely impacted when parents grieved and suffered from stress, tension, and poor health (Ghate & Hazel, 2004; Mortimore, & Whitty, 2000; Whitty, 2002). Cultural and cognitive resources were also of great importance. Parents who had limited reading skills were liable to be less able to read to their children; furthermore, their efforts were still less efficient compared to the efforts of more educated parents when they read to their children.

It was stated that social mobility as well as the idea of meritocracy was used to legalize and legitimize socioeconomic status or social class inequalities in societies. On that account, it was pointed out that whenever it was observed that social mobility decreased in societies, it became necessary for governments to act and take steps. Neo-liberal ideology based the lack of social mobility for the poor and the magnitude of the inequalities and gaps between the rich and the poor upon the personal responsibilities of the parents rather than varying structural factors in societies, and thereby tried to explain the concepts and notions of stratification, classification and inequalities in societies by “what parents do” (Sullivan, Ketende & Joshi, 2013). It was stated that the agenda of socializing, educating and rearing children was also backed by those from a rather different political perspective, aimed at supporting what was provided for children in the early years. All the same, it was expressed that the research evidence, whether progressive or reactionary, should not

be merely interpreted in terms of political agendas. Both researchers and politicians could sometimes make uncritical explanations and interpretations of evidence to support exaggerated arguments concerning the significance of child socialization, education, and rearing in explaining SES or social class inequalities.

Importance of Socioeconomic Status or Social Class

In the area of social and educational disparities, theorists and researchers were skeptical about universal acceptance of the thesis that poverty alone could not elucidate educational inequalities in societies. They nonetheless emphasized that family income was not the sole factor to determine children's educational and cognitive outcomes, but asserted that parenting practices including socialization, education and rearing of children in poor families were not necessarily enough to explain the socially constructed differences, inequalities and gaps in educational and cognitive outcomes of children.

At this point, it was indicated that difficulties and problems existed in identifying and conceptualizing social inequalities regarding poverty as a whole. While both educational and vocational attainment had strong trends across the social sphere, with differences between segments of the middle social class, current policy discourse tended to define social disparities merely in terms of inequalities and gaps between 'income poor and all other persons' (Savage & Egerton, 1997). Commentators criticized and blamed the poor themselves as a moral problem for defining social inequalities on the basis of this relationship of social disparities merely with the lowest income category, who were more likely to be unemployed.

Sociologists characteristically expressed and shaped social disparities in societies in terms of social class instead of income. However, even the idea that societies were hierarchically stratified economically, socially and culturally in the form of lower, middle and upper classes was received with suspicion in many domains. Certain politicians and social theorists claimed that people were living in an increasingly classless society (Beck, 1992; Giddens, 1991). Researchers from science domains other than sociology, such as psychology and economics, often presumed that social class merely defined an indicator for income, or that income was just a primary indicator of social class, and tended to employ income data, not social class where both of them were present. At this point, thanks to existing and competing theories and perspectives to analyze socioeconomic cultural strata or social classes in the society, the comprehending that social classes were categories described not only by income but also by job market position, power and status received acceptance. Social class was defined in terms of many criteria and indicators including income, education, profession, status, social prestige, prestige, power, influence and authority (Crompton, 2008).

Researchers used Goldthorpe's National Statistics Socioeconomic (NS-SEC) schema to optimize comparison of the present study with other studies. Goldthorpe's class schema was considered a professional scheme and established the social class position in terms of work relationships. The schema reflected both the job market position and income of an individual, as well as longer-term economic security, stability and prospects. Goldthorpe's class schema also determined power with respect to authority, command, control and autonomy associations within the workplace (Goldthorpe & McKnight, 2006). Supporters of the Cambridge Social Status Scale and others criticized Goldthorpe's class schema and claimed that social inequalities in the society were not solely based on professional classifications. They underlined the benefits of making a difference between occupational classes and other resources of social disparities in the society (Blackburn, 1998; Prandy, 1998).

Sociologists acknowledged that the transmission of social class inequalities from generation to generation was not merely by virtue of material resources but was also associated with social and cultural resources or assets. Cultural capital included cultural practices related to educated middle socioeconomic status or middle social classes, such as reading, which was associated with educational attainment (Bourdieu & Passeron, 1990; Sullivan, 2001). Social capital, on the other hand, involved many resources associated with family relationships and community social organizations beneficial for the cognitive and social development of children and adolescents (Coleman, 1994). When considered from this point of view, not only families who had single-parent and families who had many siblings, but also parents who worked long hours or had physical or mental health problems could be regarded as disadvantaged. Sociologists described some of the classified practices portrayed by politicians as a form of parenting practices such as child socialization, education and rearing, as they reflected cultural and social capital.

Studies revealed that while social class seemed to be associated with early childhood consequences across an array of fields such as health and behavior, social class disparities in education were far greater and thereby required special attention (Sullivan, Cara, Joshi, Ketende, & Obolenskaya, 2010a; Sullivan, Joshi, Ketende, & Obolenskaya, 2010b). Other studies attempted to differentiate the impact of social origins on the highest quality attained in adulthood (Bukodi & Goldthorpe, 2012; Jaeger, 2007). The present research aimed to contribute to this literature by exposing the impacts of social stratification or social class on educational passes in the society (Boudon, 1974) and especially by revealing the impacts of socioeconomic status or social class on cognitive test scores of children in the early years.

The current research attempted to evaluate the relative importance of social, and cultural and economic, assets or resources in elucidating the socioeconomic status or social class differences, disparities, and gaps in cognitive test scores

of children. The focus of the present research was how child socialization, education and rearing practices interacted with other resources of the family. It also searched for answers to the following questions: (1) How strongly or how much was socioeconomic status or social class associated with cognitive test points of seven-year-old children? (2) What was the extent to which the disparities and gaps in cognitive test scores widened between five and seven-year-old children from lower socioeconomic status or social class and their peers from higher socioeconomic status or social class? (3) To what extent did family income and measures of education explain the socioeconomic status or social class effect? When socioeconomic status or social class is regarded as a necessary indicator of family income, then family income should substantially explain the relationship between socioeconomic status or social class and cognitive test points of children. On the other hand, when social, cultural and cognitive resources rather than economic ones moderate the association between socioeconomic status or social class and children's cognitive test points, this is expected to reflect a stronger impact of education of parents than income. Bearing in mind the probability that socioeconomic status or social class impacts could eliminate the measurement error in income and education variables, when socioeconomic status or social class impacts were not mediated by income and education variables, this situation asserted the importance of socioeconomic status-based or class-based sources outside of income and education. (4) What was the extent to which the social resources of the family, such as neighborhood sources and the physical and mental health of parents, explained the influence of socioeconomic status or social class? (5) What was the extent to which the measures of child education and rearing practices explained the socioeconomic status or social class effect, and which aspects of child socialization, education and rearing practices seemed important?

The Millennium Cohort Study

It was asserted that comprehending the social circumstances encompassing the first seven years in children's lives was crucial to the study of the entire life cycle. The Millennium Cohort Study provided an opportunity to respond key questions regarding the possibility and prospects for success and advancement for children born in 2000-2001 with reference to riches and poverty, the feature of family life, and children's consequences. The research sample was chosen from all origins, with a random sample of neighborhoods stratified to provide enough representation in United Kingdom countries, in poor fields of England and in areas where black and Asian families highly concentrated. The sample design of the Millennium Cohort Study varied from the previous birth cohort studies carried out in 1946, 1958, and 1970. It included children born in a whole year and covered the entire United Kingdom. Four studies referred to as the Millennium Community Survey (MCS) sweeps (or waves) were conducted by this time: (a) Millennium Community Study 1 (MCS 1)

on nine-month-old children, (b) Millennium Community Study 2 (MCS 2) on three-year-olds, (c) Millennium Community Study 3 on five-year-olds (MCS 3), and (d) Millennium Community Study 4 on seven-year-olds (MCS 4). Interviews were conducted with both resident parents and a wide array of socioeconomic status and health data were collected in each sweep. The three latest most sweeps of the study evaluated cognitive development of children.

Analytical Method

Researchers analyzed the cognitive outcomes of seven-year-old children as regards data from previous research sweeps. They focused on the impact of the family's SES or social class origin, rather than the specific impacts through the school that could mediate family origin. In consequence, the analysis attempted to predict some medium-term consequences of initial states and living circumstances of the children. The temporal size was utilized in the longitudinal design of the data on the basis of earlier observations to estimate later results employing multiple linear regressions. Age-proper cognitive test points of seven-year-old children were modeled by checking their cognitive test scores when they were five years old. All analyses were performed in STATA software, which was appropriately loaded to explicate the sample design, attrition and non-response (Ketende, 2010).

In the fourth sweep of the Millennium Community Study three scales were used to assess the cognitive development of children. These subscales selected from the British Ability Scales included (1) Pattern Construction, (2) Word Reading subscales (Elliott, 1996) and (3) the Progress in Maths Assessment. The interviewers directly implemented the three scales of cognitive assessment to the children in their homes. The researchers examined the children's cognitive test points on a scale that combined these three assessments. The researchers investigated the children's cognitive test points on a scale that combined these three evaluations. The combined cognitive test points at the ages of five and seven were obtained through the factor analysis performed by Jones and Schoon (2010). It was asserted that children's motivation and adjustment levels might influence their cognitive test scores. It was highly emphasized that these tests should not be interpreted as tests that could assess the innate intelligence of children, but as tests that could measure their capacity to fulfill a certain task under specific circumstances.

Table 1 Descriptive statistics for test points at ages five and seven

Test	N	Mean	Std. Dev.	Min	Max
Total British Ability Scales (BAS) score of seven-year-olds	11,153	100.90	14.48	21.69	142.42
Total British Ability Scales (BAS) score of five-year-olds	11,153	107.64	15.44	40.00	160.00

(Sullivan, Ketende & Joshi, 2013, p.1193)

Summary statistics for the cognitive test points employed in the analysis are presented in Table 1. The research sought to comprehend the effect of parents' social class, income and education on cognitive test points of children. Responses to the following questions were sought: "To what extent did economic and cultural resources control socioeconomic status or social class differences, inequalities, and gaps in children's cognitive test scores?"; and especially "To what extent did aspects of child socialization, education, and rearing practices that practically overlap with cultural resources control socioeconomic status or social class differences, inequalities, and gaps in children's cognitive test scores?" The analysis was limited to the variables included in the Millennium Community Study data. It was asserted that it was surely not ideal to accept parents' education levels from the Millennium Community Study as an indicator for their cultural and cognitive resources. It was expressed that the Millennium Community Study did not contain measures of parents' cultural and cognitive assets or resources, such as parents' own reading behavior (Sullivan, 2001). Parents' cultural and cognitive resources included measures and efforts undertaken by parents to foster, nurture and enhance their children's cultural capital by reading to children, taking children to libraries, etc. The analysis included measures of social resources of parents and parental behaviors and intended to test whether socioeconomic status or social class origin was influential and robust.

Researchers presented linear regression models to designate the influence of socioeconomic status or social class origin on cognitive test scores of children. Explanatory variables were obtained in the first three sweeps of the study. When effect sizes were reported, it was stated that grounding these effect sizes meaningfully was necessary. The practice of using standardized coefficients as factors influencing the outcome and labeling their magnitude as small, middle or large, as per a set of doorsteps was not accepted (Cohen, 1988). It was claimed that such thresholds were arbitrary and could prevent researchers from considering about what the conclusions really meant (Ellis, 2010).

Explanatory Variables

Model 1 included the social class and features attributed to it. Social class was based on Goldthorpe's class schema, which grouped occupations according to work relationships and work conditions (Goldthorpe, 1997). The highest position in the occupational class hierarchy of the mother's and the father's latest job was used. Model 1 as well as income and education variables were added to Model 2. Family income was grouped in quintiles in sweep 2 of the study. These quintiles were defined and determined by the Millennium Cohort Study 2 income distribution. Families in the top quintile had an income of at least \$691 weekly, excluding taxes; whereas families in the bottom income quintile earned up to \$193 per week. The income variable was not regulated as the family composition variable contained in the present

analysis. The highest academic qualification of both mother and father with respect to their educational level was determined across the first two sweeps and included in the research. The researchers used the standard obtained from the variable given by the dataset, which handled the professional and academic qualifications of the parents, their equivalent and corresponding value in the National Professional Qualification ((NVQ)). Nevertheless, they discovered that this variable was predominantly less predictive of children's cognitive consequences than a variable that prioritized academic qualifications.

Model 3 comprised social resources in addition to Model 2. Women who postponed motherhood were able to acquire greater social resources. When there were more siblings, resources were more poorly distributed and older siblings were more favored and supported compared to younger siblings. In the second sweep of the study, the combined labor market status of the parents was also assessed. While some commentators regarded mothers' work as potentially negative, others underlined the social value of integrating single mothers into the job market. Previous research revealed that mothers' job had a small impact on cognitive test scores of five-year-old children (Hawkes & Joshi, 2011). Typically depression of mother was measured on the Kessler Scale in the second sweep of the study (Kessler, Andrews, Colpe et al., 2002). The physical and mental ill health of parents might decrease their usefulness for their children and the effectiveness of their socializing, educating and child rearing practices. The Millennium Community Study categorized families into three categories: as disadvantaged, non-disadvantaged, and minority ethnic. Different types of neighborhoods might influence the social resources accessible and usable for parents.

Model 4 included model 3 as well as parental behaviors. Breastfeeding reflected mothers' efforts, as well as their conditions and other resources, such as their own tested cognitive ability (Der, Batty, & Deary, 2006). The belief that breastfeeding had a positive impact on children's cognitive consequences was backed by the research (Quigley, Hockley, Carson, Kelly, Renfrew, & Sacker, 2009). It was expected that the authoritative form of non-rigid, consistent and strict socializing, educating and rearing practices at the age of three could lead to positive results for children. Child socialization, education and rearing practices comprised variables such as regular bedtime, regular sleep times, regular meal times, and family rules. The learning environment at home at the age of 3 reflected, at least some degree, the "concerted cultivation", which was linked to the child socialization, education and rearing practices of middle socioeconomic status or middle-class parents such as watching television, reading to children, visiting libraries, teaching the alphabet, teaching counting.

Model 4 and cognitive test scores of children aged five were included in Model 5. The addition of test scores of five-year-olds in the model implied that Model 4's predictions became a model of how it was pre-designated by

age five, and how much these maintained to be demonstrated in shifts in the test points of five-year-olds and those of seven-year-olds. It was basically a progression model given that different tests were administered at age five and age seven.

Results

Table 2 displayed linear regression models. Model 1 showed a strong trend of socioeconomic status or social class in cognitive test scores of children when other variables were controlled for in the model. The benefit emerged for the higher salariat was 18.5 times greater than the associated benefit over an additional month compared to the routine and semi-routine working class. Here it was observed that there was an advantage equivalent to the 1.7 month period difference for women in this model.

Model 2 introduced the family income and education of parents in quintiles. Parents' qualifications in terms of income and education level most strongly predicted cognitive test scores of children in this model. Children of university graduates had an equivalent advantage over the 12.5-month period, even with the larger coefficient for children of parents with postgraduate degrees. A-levels and A-C GCSE transitions significantly predicted higher cognitive test points compared to the non-qualified. Family income also appeared significant, but coefficients were more modest in magnitude. Children of families in the highest income quintile acquired an equivalent advantage over the 2.7-month period compared to children from families in the lowest income quintile. In this model, the impact of socioeconomic status or social class decreased, but continued to remain significant. The advantage of higher salariat declined to the equivalent level of the 7.4-month period. Model 3 included social resources. Parents' job and spouse status did not seem to be statistically significant at wave 2 of the study. The mother's age at first birth was significant and children of older mothers obtained higher cognitive test scores compared to children of mothers up to age 20.

Parental behaviors were introduced in Model 4. Breastfeeding was favorable, even if only performed up to three months of age, but with a greater duration from three months to six months, breastfeeding reflected an advantage equivalent to 2.8-month in age.

Table 2 Regression analyses of Combined British Ability scores at age seven

		Combined Cognitive Ability Scores at seven							
Age at MCS4		Social Class (highest either parent MCS1/2)							
	Months	Higher Salarariat	Lower Salarariat	Intermediate	Petty bourgeois	Lower supervisory and tech	Semi and routine	Never worked	
Model 1	0.68***	12.57***	8.97***	5.58***	3.33***	3.16***	0.00	-3.21*	
Model 2	0.70***	5.15***	3.91***	2.88***	1.22	1.55*	0.00	-2.27	
Model 3	0.70***	4.44***	3.23***	2.21***	1.03	1.53*	0.00	-1.67	
Model 4	0.68***	3.92***	2.81***	1.78***	0.79	1.29*	0.00	-1.45	
Model 5	1.00***	1.77***	1.56***	0.89	0.08	0.70	0.00	-0.89	
Income quintiles MCS2									
	Bottom	Second	Middle	Fourth	Top				
Model 1									
Model 2	0.00	0.15	1.63**	2.08***	2.53***				
Model 3	0.00	-0.03	1.17	1.45*	1.89**				
Model 4	0.00	0.08	1.15	1.38*	1.93**				
Model 5	0.00	-0.19	0.73	0.97	1.21*				
Education(highest either parent MCS1/2)									
	Higher degree	First degree	A level or HE diploma	GCSE A-C	GCSE D-G	Other or vocational	None		
Model 1									
Model 2	10.33***	8.78***	5.73***	3.48***	0.51	2.09	0.00		
Model 3	8.85***	7.24***	4.33***	2.37**	-0.36	1.44	0.00		
Model 4	6.83***	5.18***	2.80***	1.38	-0.83	0.96	0.00		
Model 5	3.93***	2.60***	1.22	0.25	-0.82	0.24	0.00		
Mother's age at first birth									
	13-20	21-25	26-30	31-35	36+				
Model 1									
Model 2									
Model 3	0.00	0.80	1.31*	1.45*	1.78				
Model 4	0.00	0.59	0.76	0.88	1.24				
Model 5	0.00	0.43	0.00	-0.06	1.03				
Younger siblings MCS3									
	0	1	2	3+					
Model 1									
Model 2									
Model 3	0.00	-0.18	-0.56	-2.50					
Model 4	0.00	-0.30	-0.76	-1.85					
Model 5	0.00	0.27	0.31	0.69					
Older siblings MCS3									
	0	1	2	3	4+				
Model 1									
Model 2									
Model 3	0.00	-0.57	-2.04***	-2.40**	-3.09**				
Model 4	0.00	-0.051	-1.81***	-2.06	-2.67*				
Model 5	0.00	0.38	-0.80	-0.24	-0.27				
Breastfeeding MCS 1					Regular bedtimes MCS2				
	None	Up to 3 months	3-6 months	6 months or more	Never, sometimes	Usually, always			

Model 1								
Model 2								
Model 3								
Model 4	0.00	0.76*	1.88***	1.81***	-2.09***	0.00		
Model 5	0.00	0.21	0.71	1.00**	-1.22***	0.00		
	Regular mealtimes MCS 2			TV MCS 2				
	Sometimes	Usually	Always	Up to one hour	> 1 hour, < 3 hours	Or, more than 3 hours		
Model 1								
Model 2								
Model 3								
Model 4	-1.55**	0.55	0.00	0.00	1.38***	2.10***		
Model 5	-0.83	0.35	0.00	0.00	0.84**	1.22**		
	Read to child MCS 2			Library visits MCS 2		Teach child alphabet		
	Daily	At least weekly	Less often	Yes	No	Yes	No	
Model 1								
Model 2								
Model 3								
Model 4	0.00	-1.06**	-1.80*	0.00	-1.92***	0.00	-1.55***	
Model 5	0.00	-0.28	-0.60	0.00	-1.08***	0.00	-0.72*	
	Teach child counting MCS 2		Rules MCS 2			BAS score MCS 3	Age in months MCS 3	Constant
	Yes	No	Strictly enforced	Not strictly enforced	It varies			
Model 1								36.12***
Model 2								31.18***
Model 3								33.51***
Model 4	0.00	-1.68	0.00	-0.93*	-0.04			37.22***
Model 5	0.00	-1.87*	0.00	-0.24	0.21	0.53***	-0.15	-33.80***
Unweighted Analysis Sample = 11.153								
Adjusted R-squared								
Model 1	0.13							
Model 2	0.16							
Model 3	0.17							
Model 4	0.19							
Model 5	0.4							

(Sullivan, Ketende ve Joshi, 2013, p.1197)

Notes: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.0001$.

Regulation of children's sleep and meal times, in other words, regular sleep times and regular meal times, were both significant in the anticipated aspect. Implementing rules which were not very strictly carried out was negative compared to having strictly applied rules. Results for television watching were contrary to expectations, with a positive coefficient for children who viewed television for an hour or more daily. There was an obviously greater advantage for children who

viewed television for more than three hours daily, which reflected an advantage equivalent to over a three-month period. More consistent with expectations, reading to children on a daily basis, taking them to the library, and helping them learn the alphabet, all had significant impacts in the estimated direction. Could information regarding child socialization, education and rearing practices explain socioeconomic status or social class gradients? Because the coefficients on education and socioeconomic status or social class of parents most strongly predicted cognitive test scores of children in model 4, and family status only slightly decreased with fuller power in model 3, information on child socialization, education and rearing practices for children largely failed to explain socioeconomic status or social class gradients.

Model 5 comprised cognitive test scores of children at age five and principally displayed progression between the ages of five and seven. The impact of socioeconomic status or social class and parental education on the shift since age five was still strong, albeit diminished; however, only the highest income category remained significant in this model. At the age of three, regulating child socialization, education and rearing behavior measures including children's sleep times, their television watching, taking them to the library and teaching them the alphabet remained significant in model 5 and teaching counting became significant.

The degree to which inclusion of each additional pattern of variables mediated socioeconomic status or social class, education and income was exposed. The coefficients as factors affecting the outcome were divided by coefficients for monthly periods and statistically significant variables were displayed. Not surprisingly, socioeconomic status or social class variables and characteristics sharply declined when income and education were included in Model 2. Addition of social resources of families in Model 3 brought about a more modest reduction in coefficients of socioeconomic status or social class and education, but the coefficient of income significantly decreased. Coefficients in socioeconomic status or social class and education gradually fell to pieces or disappeared when parental behavior was added in Model 4, but they remained solid and substantial in spite of the large number of potentially mediating variables involved. Ultimately, in model 5, children of parents with higher degrees or undergraduate degrees and children with salariat class parents made considerably more progress between the ages of five and seven years, respectively, compared to the children of parents with unqualified and routine and semi-routine occupations. Total predictions for the highest SES or social class and education categories demonstrated that inequalities and gaps observed in the cognitive test scores among children of parents in the highest SES or social class and highest education categories, and parents who were not in the highest SES or social class and education categories increased by about six months between the ages of five and seven.

Conclusions

It could be seen that socioeconomic status or social class categories demonstrated a vast array of resources that promoted and improved educational advantages. Current research attempted to explain some of these resources to contribute to the understanding of the differences, disparities, and gaps in cognitive test points observed between students from lower socioeconomic status or social class families and their peers from higher socioeconomic status or social class families during the first years of primary school. socioeconomic status or social class differences, inequalities and gaps in children's cognitive test points continued to exist prominently in the first years of primary school.

Social class, income and education were the main indicators of the socio-economic position of the parents. It was emphasized that there were difficult conceptual issues in the measurement of social class, income and education and how parents operationalized their social class, education and income had significant implications for the research outcomes. In the matter of parental education, socioeconomic status or social class seemed to be more predictive of cognitive consequences of children than education when using the standard obtained from the variable created in accordance with educational qualifications and educational levels equivalent to National Vocational Qualifications (NVQ). Nonetheless, parental education predicted children's cognitive outcomes more than socioeconomic status or social class when an education variable that prioritized academic qualifications over vocational ones was created. It was stated that there were two possible reasons for this. Firstly, it was asserted that British vocational qualifications based on Goldthorpe's class schema were confusing and the National Vocational Qualification (NVQ) level attained by individuals was not clear and distinct, which could eventually give rise to measurement errors. Secondly, it was stated that academic qualifications might be a better indicator of abilities in core academic achievements such as mathematics and reading. Researchers and theorists asserted that such sloppiness in the structure of research findings was not often reported. It was also highlighted that the sloppiness of the widely used standard National Vocational Qualification ((NVQ) variable based on Goldthorpe's class schema should be expressed at this point, and that there were fundamental problems to operationalize the NVQ and issues of operationalization were quite important.

It was stated that when socioeconomic status or social class was an essential, fundamental and principal indicator of family income, then family income should largely explain the relationship between socioeconomic status or social class and cognitive test points of children. This theory could not be supported as family income were prone to have a weaker correlation with cognitive test points of children in terms of socioeconomic status or social

class, with family income as measured in at least five broad groups utilized here. It was suggested that the Millennium Community Study was not a safe and dependable resource for details of the highest ranges and levels of family income. It was also pointed out that models that were solely dependent on measures of family income to control for socioeconomic status or social class origin were likely to overestimate the impacts of socioeconomic status or social class origin, as they might cause other impacts of socioeconomic status or social class origin to be overestimated. When parents' income emerged as a weaker predictor of their life chances compared to socioeconomic status or social class and education of parents, this also had implications for debates on social mobility. The views that parental income alone was not the best index of resources and it was not the only resource of providing, guiding and marshaling opportunities and chances for their children in order to enhance and improve their academic achievement or cognitive test scores were addressed in discussions.

It was argued that when cultural and cognitive resources rather than material ones steered the relationship between socioeconomic status or social class and children's cognitive test points, this ought to reflect a stronger "effect" of parental education than of parental income. The present research supported this view and discovered that the educational qualifications and levels of parents predicted cognitive test scores of children in the most coherent manner. Nevertheless, the analysis ideally preferred to employ direct measures of cultural and cognitive resources of parents, especially considering the importance of approaches and efforts for precise operationalization of parents' education towards this outcome.

The research discovered that family income and parental education did not completely mediate a direct effect of occupational social class based on Goldhorpe's class schema. Researchers pointed out the potential significance of other class-based sources aside from family income and parental education, even though the possibility of explaining some of this effect could not be disregarded when both family income and parental education were measured more precisely and accurately. The significance of maternal depression pointed to the association between cognitive progress of children and well-being of their parents. Undoubtedly, family structure and job market status did not substantially predict cognitive test scores of children in the model, over and above their associated social class, income, and education.

Getting back to child socializing, educating and rearing behaviors, researchers were provided support both for the value of authoritative practices that required consistent implementation of rules and routines in socialization, education and rearing processes, and for the variable created to measure and determine the learning environment at home. It was observed that this variable was associated with Lareau's (2003) idea of concerted cultivation.

By using their cultural capital, parents exerted conscious, deliberate and persistent efforts to foster, nurture and enhance skills in their children and invested in their education.

An unpredicted positive sign was also found for TV viewing. Letting children to watch television for a few hours a day could be viewed as an indicator of uninvolved parenting practices such as socialization, education and child rearing. Results for television viewing were contrary to expectations, with a positive coefficient for children who viewed television for an hour or more daily. There was an apparently greater advantage for children who viewed television for more than three hours a day, which reflected an advantage equivalent to over a three-month period. All the same, another study on three-year-old children's school readiness scores revealed a similar positive relationship with television watching, albeit only for mothers with lower education (Joshi, De, & Rochebrochard, 2012). Here it was argued that the educational potential of watching television was likely to be underestimated.

In conclusion, socioeconomic status or social class and parental education were directly connected not only to growing inequalities and gaps in children's cognitive test scores between the ages of five and seven, but also to absolute disparities in the cognitive test points at the age of seven. Neither a wide array of measures of the family's social resources nor parental behaviors could entirely explain this connection when included in the model. Inequalities and gaps in cognitive test points observed between students from lower socioeconomic status or social class families and their peers from higher socioeconomic status or social class families could not be totally explained either. When the family's social resources and socializing, educating and rearing practices were included in the model, they could only very modestly mediate the links between socioeconomic status or social class and education on the one hand, and children's cognitive test points on the other. It was indicated that psychologists were right in emphasizing the importance of what parents did, and economists in emphasizing the importance of income. The present research attempted to merge the perspectives of psychologists, who emphasized the importance of what parents did, and those of economists, who emphasized the importance of income, with sociological understandings of social inequalities in terms of the basis of socioeconomic status or social class. Parents' socioeconomic status or social class and education reflected not only what parents did but also what they had - and what they had was not only money. It was asserted that other categorized resources, including cultural and cognitive ones, were also extremely important. Future research should be able to consider and include variables that would cover these family sources in the most important longitudinal datasets. The view that social mobility has scientific laws and that the responsibility of deeply-rooted inequalities in society can be laid on poor parents should be further discussed.

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