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CONTENTS

CHAPTER 1

STUDENTS' PERCEPTION ON A WEB-ENHANCED TURKISH LANGUAGE COURSE

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1. Introduction

In recent years, the rapid advancement of technology has ushered in a new era of socialization and information acquisition, fundamentally altering how we interact with the world around us. Notably, the impact of technology extends beyond our daily lives and has permeated the realm of education. Thus, educators at every level adopt technology in the classroom concerning its potential to serve as an instructional tool, augmenting students' in-class learning experiences, or as a vehicle to provide instruction, either entirely or partially, through online platforms (Allen & Seaman, 2009). Jamil and Shah (2011) highlighted that this transformative effect has spurred a shift in teaching methodologies, giving rise to a wealth of digital resources. This digital revolution is not merely shaping educational curricula but also reshaping how educators teach and students learn.

Moreover, the convergence of education and technology has ushered in a transformative era, redefining traditional teaching paradigms and propelling students into an interconnected web-enhanced learning environment. An illustrative example of this paradigm shift is the emergence of Web 2.0 tools or course management systems. These free platforms empower educators to foster online interactions and facilitate a multifaceted approach to education, encompassing tasks such as assignment submissions and downloads.

Besides, various unconventional platforms have enriched the educational landscape, including blogs, wikis, and social media giants like Facebook. In tandem with the rising popularity of these tools, the boundary between formal and informal learning has blurred, fostering an environment where teachers and students can engage beyond the confines of the traditional classroom. A pivotal facet of this transformation is evident in foreign language learning. With students emerging as digital natives (Prensky, 2001), language learning has undergone a digital metamorphosis, with web-based tools and applications becoming integral to the process. Educators are increasingly harnessing technology, particularly Web 2.0 tools, to forge meaningful academic connections with students, transcending the limitations of physical classrooms and extending into diverse language learning environments. Thus, teachers also adapt themselves and use technology, especially Web 2.0 tools, for academic purposes to engage with students beyond just in school in any possible language learning environment.

It is evidenced that students often lack opportunities to practice course content beyond the classroom setting. To bridge this gap, web-enhanced technologies, mainly learning management systems, have emerged as a potent solution, offering a conduit for continuous language exposure. Learn-

ing Management Systems (LMS) have revolutionized education by providing a comprehensive digital framework for delivering, managing, and enhancing learning experiences. In other words, LMSs offer an invaluable toolbox that addresses the unique challenges of learning function as virtual classrooms, enabling educators to integrate technology into their instruction seamlessly. This integration yields numerous benefits that optimize learning and amplify course outcomes. For example, one of the critical advantages of LMSs is their capacity to transcend physical limitations. It facilitates synchronous and asynchronous learning, allowing students to access lessons, practice materials, and assignments irrespective of their physical presence. This versatility is particularly vital for mastering the intricacies of the content of the courses, as consistent practice and exposure are fundamental to grasping its unique structures.

Furthermore, LMSs empower teachers to curate engaging and interactive content tailored to the learning journey. Gamification elements, multimedia resources, and interactive exercises can seamlessly integrate within the LMS interface. This dynamic approach captivates learners and aligns with teaching pedagogies emphasizing contextual and immersive learning experiences. Discussion forums, collaborative projects, and peer reviews offered by LMS platforms allow learners to interact with the course contents and their peers. This interaction simulates real-world language use, enabling students to apply their knowledge in practical contexts and enhancing their communication skills.

Likewise, the assessment capabilities of LMSs offer adaptive quizzes and automated assessments that can gauge learners and teachers to identify areas that require reinforcement. This data-driven approach informs targeted instruction, ensuring learners receive tailored support based on their needs. The LMSs are an indispensable asset in modern education, particularly for teaching Turkish at university level. Their versatility, interactive features, accessibility, and assessment capabilities create an environment that fosters deep understanding, engagement, and practical application of course contents.

Turkish language courses at the university level typically demand extensive drills, repeated practice, and constructive feedback. The LMSs, as instructional tools, offer a conduit for these pedagogical essentials. By leveraging its features, educators can dispense assignments and facilitate online feedback, enriching the learning experience. The platform's interactive interface further empowers students to pose questions and exchange insights via the main wall, fostering a dynamic and flexible learning environment. Notably, the benefits extend beyond the confines of the classroom. The LMSs obviate absenteeism challenges, enabling students to access missed content and maintain alignment with the curriculum. This

digital milieu also emboldens reticent students, who may find their voice in the virtual realm, as Miller (2001) observes. Moreover, using LMSs in teaching, as Kongchan (2013) posited, engenders a secure virtual classroom environment where students connect, collaborate, and access course materials effortlessly.

In light of the increasing reliance on technology for course delivery, it's crucial to recognize the wide-ranging experiences and comfort levels with technology among students, especially non-traditional learners. This raises several questions for instructors about the optimal approaches to delivering courses that effectively cater to the diverse needs of university students. Regarding this fact, the present study intends to explore the pivotal question: Does incorporating web-enhanced activities improve students' understanding of course contents? Furthermore, an ancillary inquiry seeks to ascertain whether this web-enhanced methodology correlates with heightened academic achievements. The exploration of LMS's impact on Turkish courses at a university level serves as a microcosm of this educational revolution, encapsulating the potential of technology to amplify learning experiences and reshape student perceptions.

2. Literature Review

Technology in teaching and learning started with the audio devices still being used in language labs (Chinnery, 2006). Then, computers took their place on the stage, providing visual support, especially with the help of projectors enabling, e.g., PowerPoint, videos and pictures, to be shown for more organized opinions in learners' minds (Kazancı, 2012). Internet and hands-on devices became available worldwide, and technology implementation into teaching environments emerged.

Today, the support of recent technologies in teaching and learning cannot be ignored. Specifically, social networks, podcasts, e-mail services, blogs and wikis are mainly used Web 2.0 tools in language classrooms. They changed the traditional classroom interaction patterns, in which the teacher is the leader and teaches one-way information, providing more opportunities for students to interact with their classmates and teachers whenever they want. Moreover, these tools increase student motivation to use the target language (Warschauer, 1996). Similarly, Lao and Gonzales (2005) claimed that online learning through web-based platforms can be a rewarding and rich experience for learners and teachers, primarily if the tool used to conduct a class is effectively utilized.

The fact that teachers use technology to teach better and more effectively has been questioned since technology started to visit classrooms (Dick, 2011; Luckin et al., 2009; Miyazoe & Anderson, 2010; Türkmen, 2012; Zorko, 2009). As Botsch and Botsch (2001) stated, much of the early

literature regarding web-enhanced instruction was centered on a comparison and contrast between traditional) course delivery and online modes of delivery. Thus, little research exists on how students perceive web-enhanced courses, especially in Turkish.

In a study, Sanders and Morrison-Shetlar (2001) studied the relationship between student attitudes toward Web-enhanced instruction and some variables. Their findings revealed a positive effect of the Web component on student learning in general. They found that females had significantly more positive attitudes toward Web-enhanced instruction than males and used the Web more often than males. Additionally, their study revealed that age, race, year in school, computer experience, and learning styles did not affect student use of the Web.

In another study conducted by Alghazo (2006), the focus was on exploring the attitudes of students enrolled in an educational technology course toward web-enhanced instruction. The study revealed that students displayed favorable attitudes across various aspects of web-enhanced instruction. Specifically, participants found web-enhanced instruction beneficial in facilitating discussions about course content via discussion boards, communicating with the course instructor, accessing grades online, conveniently obtaining course-related materials, submitting assignments through web platforms, and enhancing overall comprehension and communication with classmates.

Similarly, Alston and English's (2007) research, which focused on assessing the efficacy of web-enhanced agricultural education methods, found that the participants mostly concurred on the advantages of web-enhanced courses. They perceived all the components of the website being examined as highly valuable.

In a research study examining students' views on web-enhanced learning environments, Yıldırım (2002) found that students preferred accessing the course website on campus, mainly due to financial constraints. Another noteworthy discovery was the importance of the website's reliability in providing information. Yıldırım (2002) concluded that students highly value timely access to essential information and announcements on the website to maintain their trust in the platform.

In a study conducted by Lewohl (2023), an investigation was carried out into students' perspectives regarding the teaching approach, encompassing the incorporation of a web-enhanced active learning platform within the classroom, the utilization of available resources, and the factors influencing students' choice to attend in-person classes. The outcomes of this study indicated that students considered face-to-face classes advantageous for their learning, and they found that the integration of web-en-

hanced learning activities contributed significantly to their comprehension of the course material. Similarly, Wahyuni and Hakiki (2023) who examined students' perception toward the use of web-based technology for learning English skills at university level found that students have positive perception of the use of web-based technology related to language skills

The literature review revealed that most studies inquiring about the effectiveness of LMSs or web-enhanced instruction in language teaching generally focused on teaching writing. For example, Miyazoe and Anderson (2010) examined free writing and translation from English to Japanese for 61 sophomore students at a university in Japan and found that students who enrolled in web-enhanced courses showed a noticeable improvement in their writing skills. Another study by Lin and Yang (2011) found that wiki-based writing projects encouraged peer feedback and interaction among students and motivated students positively in language learning. Similarly, Turkmen (2012), who used a free learning management system for eight-week English classes with university students, also found that students who participated in the study benefited from using web-enhanced activities in their English classes.

The review of the available literature shows that students' perceptions of web-enhanced courses are mostly limited to reading and writing skills. Furthermore, the recent literature review on web-enhanced courses revealed numerous studies on the issue, especially as a teaching and learning tool. Thus, the present study intended to examine university students' perspectives with a focus on a Turkish Language course.

3. Methodology

This quantitative case study is intended to explore university students' perceptions of web-enhanced courses in general. The case study is particularly suitable for description, explanation and exploratory research or, as Yin (2009) suggests, to explain, describe, illustrate and enlighten a phenomenon in the everyday contexts in which it occurs. The case study seeks more explanatory information through 'how', 'what' and 'why' questions. Thus, the present study assessed how students' attitudes toward web-enhanced learning might influence their engagement, satisfaction, and subsequent academic achievements. A carefully constructed questionnaire was adapted, drawing upon validated scales to measure students' perceptions of various aspects of web-enhanced courses, including usability, interaction quality, and overall satisfaction. The questionnaire was administered to a sample of students currently enrolled in a web-enhanced course. Data was collected employing a cross-sectional approach at a single time to capture a snapshot of students' perceptions. The research used statistical techniques to uncover potential connections between students' perceptions

and academic outcomes. This rigorous quantitative case study sought to provide empirical insights that could inform the design and improvement of web-enhanced courses, enhancing online education in the university context.

Over 14 weeks, the lessons were held using LMS, and the quantitative data was collected and analyzed at the end of the academic term. The research was conducted in two web-enhanced Turkish Language classes whose level and the content of the topics were the same. As the course instructor, the researcher ran the classes using Microsoft Teams as LMS and uploaded every material studied in the classroom. Furthermore, the researcher gave students online homework and made sharing available so every student could share material and post replies.

3.2. Participants

The sampling method used in this study was non-probability convenience sampling. The participants were 80 (32 M, 48 F) students who enrolled in a Turkish language course in the Architecture faculty of a state university in Turkey. Their participation in the study was voluntary, and all signed a consent form informing them about the research process. All the participants were in their first year of university education and took the Turkish language course as a compulsory course.

3.3. Data Gathering Instrument

The present study's data was collected through the "Students' perceptions of web-enhanced courses survey" to identify students' perceptions and feelings about Web-enhanced Turkish language course. The survey is a five-point Likert scale developed by the researcher through a comprehensive review of related literature. The first part of the scale inquired about the participants' demographic information, and the second part included a set of 15 statements about students' perceptions of their experiences following the web-enhanced Turkish language course. For each statement, students indicated their level of agreement on a five-point scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The second section focused on various facets of web-enhanced instruction designed for study participants. Using the scale, the researcher sought to find whether students had benefited from using web-enhanced courses and intended to explore their attitudes toward a web-enhanced learning environment. As for the reliability and validity of the data-gathering instrument, two experts evaluated the final version of the scale, and necessary revisions were made in terms of readability and content validity. Additionally, to ensure the reliability and practicality of the instrument, a pilot test of the survey was conducted with students from a different program. These students were

guided to respond to the survey questions as if they were taking it and to report any issues they encountered with the phrasing of the questions or the provided instructions. Feedback obtained from the pilot study was then used to implement essential adjustments and refinements.

3.4. Procedure

In the first week, the researcher introduced the LMS and its features to students. He informed students that they would use the LMS for their Turkish classes to access materials covered in the course, submit homework, check grades and process and do extra activities online. The LMS was password protected, where only the participating students and teacher could access the available materials and synchronous sessions. Starting from the second week, the researcher ran the synchronous lessons and uploaded recorded videos of synchronous lectures and other materials covered in class in a library section of the LMS.

Additionally, the researcher uploaded weekly assignments to be completed online due the following week, where students upload their work and see their classmate's homework. Besides, the researcher activated asynchronous discussions every weekend, which enabled students to discuss the course content homework or ask questions to the instructor. The discussion board of classes was available for students to post and reply to until the next session started so that students could ask questions to get answers from both the instructor and their classmates.

3.5. Data Analysis

The study's primary purpose was to gather evaluative feedback from university students about a web-enhanced Turkish language course. Since the aim of the present study is not to compare the findings in terms of some variables but to figure out the participants' perceptions about a web-enhanced course and its implications on their understanding of the course content, the analysis of the data is performed through descriptive statistical analysis that summarizes or describes the characteristics of a data set. Furthermore, univariate data analysis was conducted in the data analysis of the present study since it focuses on only one characteristic or attribute: the attitudes about a web-enhanced course. Thus, the gathered data were analyzed through a statistical software program, findings were tabulated, and frequency counts were generated to illustrate the participants' attitudes concerning the web-enhanced course. As Gravetter and Wallnau (2007) stated, the frequency distribution represents the number of individuals in each category on the measurement scale.

4. Findings and Discussion

The research aimed to assess students' perceptions and attitudes to-

ward a web-enhanced Turkish language course at the university level. The data was collected through a survey, and participants were asked to rate their agreement with various statements on a scale ranging from "Strongly Disagree (SD)" to "Strongly Agree (SA)." The overall findings of the research are illustrated in Table 1.

Table 1. *Participants' perceptions concerning a web-enhanced Turkish language course.*

Items	SD (%)	D (%)	N (%)	A (%)	SA (%)
1. I like participating in a web-enhanced course	1.20	4.06	7.89	24.61	62.24
2. I like submitting work and getting feedback on the web-enhanced course	6.78	9	13.15	46	25.05
3. I like having the opportunity to access materials given in the web-enhanced course	0	0	10.52	38.17	51.03
4. I am happy with consulting the teacher personally on web-enhanced course	0	2.63	7.89	61.22	28.25
5. I like having web-enhanced courses	3.48	12.30	10.52	28.48	45.02
6. I find the questions and answers on the web-enhanced course assist my understanding of course content	3.15	10.02	10.52	55.21	21.1
7. Web-enhanced course interface is easy to use.	11	2.15	5.26	36	45.57
8. I feel comfortable sharing my ideas on web-enhanced course	4.33	3.56	7.89	42.16	42.05
9. I used a web-enhanced course when I was absent in synchronous sessions	0	2.63	5.26	51.10	41
10. I use web-enhanced courses to get help from my classmates	44.52	30.26	2	13.20	10.02
11. I like having discussions and debates about topics with classmates on web-enhanced course	14.20	4.22	18.42	21.05	42.05
12. Using web-enhanced courses has prepared me for doing online classes in the future	8.36	7.42	18.42	35.78	30
13. Using web-enhanced courses helped me understand lessons better.	0	15.78	10.52	22.18	51.05
14. I use the library feature on web-enhanced courses to review concepts or topics discussed in class.	3.40	4.49	13.15	36.26	42.68
15. I enjoy the links, clips, and practice quizzes uploaded on the web-enhanced course	6.14	4.38	7.89	24.07	57.05

As summarized in Table 1, the findings revealed that participants generally positively perceived a web-enhanced Turkish language course. As for the participants' preference for participation, it was found that the statement "I like participating in a web-enhanced course" received a high agreement rate. That is, most students (86.13%) expressed a positive attitude towards web-enhanced courses, with 62.24% strongly agreeing that they enjoy participating in such courses, indicating participants strongly prefer this learning mode. This finding also shows similarities with the longitudinal study of Strambi (2004), who found that web-enhanced courses can contribute to learners' positive perceptions of the opportunities offered by their learning environment.

The findings showed that participants demonstrated a strong desire for feedback, as indicated by the statement, "I like submitting work and getting feedback on the web-enhanced course." Further analysis revealed that while a significant number of students (46%) agreed or strongly agreed that they like submitting their work and getting feedback in a web-enhanced course, it's noteworthy that a quarter of the respondents (25.05%) disagreed or strongly disagreed with this statement. This suggests that a subset of students may have concerns or preferences about online course feedback mechanisms.

As for access to course materials, participants found it essential to have access to all course materials in web-enhanced courses, with 89.2% agreeing or strongly agreeing with the statement, "I like having the opportunity to reach every material given in the web-enhanced course". Most students emphasized the importance of accessing all course materials in web-enhanced courses. This highlights the convenience and flexibility offered by online resources, enabling students to engage with course content more comprehensively. This finding of the present study shows similarities with Kumar and Kumar (2002), who examined student satisfaction with technology-enhanced traditional courses and found that students were satisfied with the technology-enhanced course and liked the availability of lecture notes, links to additional resources and online discussions.

The finding showed that consulting teachers personally on the web-enhanced course was preferred by a significant portion of students, as indicated by the statement, "I am happy with consulting the teacher personally on web-enhanced course". It was found that 89.47% of participants agreed or strongly agreed. This finding indicates that students greatly appreciated the opportunity for personal consultation with teachers in web-enhanced courses, and they value the ability to connect with instructors in web-enhanced learning environments.

Students believed that web-enhanced courses helped their understanding of course content, as indicated by the statement, "I find the questions

and answers on the web-enhanced course assist my understanding of course content covered in class". It is found that the majority of students (76.31%) believed that web-enhanced courses assist in their understanding of course content. This finding underscores the potential of web-enhanced course resources, such as discussion forums and supplementary materials, to enhance the learning experience.

As for the usability and user-friendliness of the web-enhanced course, the findings showed that the participants' perceptions concerning the course interface were highly positive. It was found that 81.57% of the participants agreed or strongly agreed that using the web-enhanced course interface was easy to use, and they felt comfortable using its features, such as sharing content and posting replies. This suggests that if adequately tailored, the usability and user-friendliness of web-enhanced learning platforms appeal to the students' interest and engage them in the course content.

When the data related to participants' perceptions of comfort with participation were examined, it is found that students generally felt comfortable sharing their ideas on web-enhanced courses, with 49.21% agreeing or strongly agreeing with the statement "I feel comfortable sharing my ideas on web-enhanced course". The findings indicate that students were eager to post replies when something was shared, and they participated in discussions, got help from their classmates and did not hesitate to ask the teacher personally. The finding that almost half of the students felt comfortable sharing their ideas in web-enhanced courses might indicate that while some students are confident in participating actively, there may be room for creating more supportive online discussion environments. This finding suggests that the researcher's role as a moderator rather than the ultimate leader in web-enhanced courses might give more opportunities for students to learn rather than to be taught.

The data analysis revealed that students often used web-enhanced courses when absent in synchronous sessions (92.1%) and for collaboration with classmates (43.22%). This finding indicates that web-enhanced classes served as a valuable resource for students when they were absent from synchronous sessions and for collaborating with classmates, highlighting the flexibility and collaborative potential of web-enhanced courses.

Participants were asked if enrolling in a web-enhanced course prepare them for online education. The findings exposed that using web-enhanced systems was perceived as preparing them for future online classes or classwork, with 65.2% agreeing or strongly agreeing. It was found that a significant majority of students believed that web-enhanced courses prepared them for future online classes or classwork. This implies that web-enhanced lessons can serve as a valuable transition point for students who may engage in more extensive online learning.

As for the contribution of web-enhanced courses to understanding the course content, findings uncovered that participants believed that web-enhanced classes helped them understand lessons better, with 73.57% agreeing or strongly agreeing. This finding showed that students mostly agreed that web-enhanced classes helped them understand lessons better, emphasizing the educational benefits of digital resources and interactivity in web-enhanced courses.

In terms of the participants' perceptions concerning the web-enhanced course's library feature, the findings exposed that the use of the library feature for reviewing course concepts was moderately utilized, with 58.94% of students agreeing or strongly agreeing. This finding suggests that participants recognize the value of course materials but may not fully exploit all available resources.

Finally, the findings concerning the participants' perceptions about the shared multimedia elements like links, clips, and practice quizzes revealed that multimedia elements were generally enjoyed by students, as indicated by 81.12% agreeing or strongly agreeing. This finding highlights the role of multimedia in engaging and enhancing the learning experience in web-enhanced courses.

5. Conclusion

The findings of this study reveal a generally positive perception among participants towards web-enhanced Turkish language course. Most students strongly prefer this mode of learning, with a significant proportion indicating their enjoyment of participating in web-enhanced courses. This underscores the importance of integrating web-enhanced elements into language education, as it aligns with students' preferences and provides a promising avenue for enhancing engagement and learning outcomes.

Furthermore, the study highlights the students' strong desire for feedback, although it's important to acknowledge the existence of a subset who may have different preferences regarding feedback mechanisms in online courses. Educators should consider this diversity when designing feedback systems to cater to individual learning styles and needs.

The emphasis on the importance of having access to all course materials in web-enhanced courses signifies the convenience and flexibility that online resources offer. This underscores the need for educators to ensure comprehensive accessibility to course content, thereby enhancing the overall learning experience.

Moreover, the preference for personal consultation with instructors in web-enhanced environments is noteworthy. Encouraging direct communication between students and educators can contribute to a supportive and

effective learning atmosphere, bridging the gap between traditional classroom instruction and online education.

Additionally, the positive perception of the usability and user-friendliness of web-enhanced course interfaces indicates the significance of well-designed online platforms. Such user-friendly environments not only promote active participation but also facilitate engagement with course content.

While many students felt comfortable sharing their ideas in web-enhanced courses, there is room for creating more inclusive and supportive online discussion environments. Encouraging student-led discussions and adopting an instructor moderator role may foster a more participatory learning atmosphere.

Overall, web-enhanced courses offer flexibility, collaboration opportunities, and valuable preparation for future online learning endeavors. They also contribute to an improved understanding of course content and are enhanced by multimedia elements. These findings provide useful insights for educators and institutions, guiding them in optimizing online course offerings to align with student expectations and improve the quality of online education in the Turkish language learning context.

In light of the results of this study, it can be concluded that if appropriately applied, students can benefit from a web-enhanced learning environment. As they are considered digital natives (Prensky, 2001), they are familiar with using technology; however, they should be guided in using technology for educational purposes. A web-enhanced course can provide them with interaction skills, promote their learning and make learning more enjoyable.

In conclusion, the present study's findings suggest that students have a generally positive perception of web-enhanced courses, valuing features like access to course materials, personal consultation with teachers, and the potential for improved understanding. These findings can inform the design and implementation of web-enhanced courses to meet students' preferences and needs better. Moreover, these insights can guide educators and institutions in optimizing their online course offerings to meet their students' expectations better.

It should be noted that this study was limited to a web-enhanced Turkish language course with 80 participants studying at the architecture faculty of a state university. Further studies should be conducted in different settings, with varying numbers of students for more extended periods.

REFERENCES

Allen, I. &. Seaman, J. (2009). Learning on demand: Online education in the United States. Sloan Consortium.

Alghazo, I. M. (2006). Student attitudes toward web-enhanced instruction in an educational technology course. *College Student Journal, 40*(3), pp. 620-630.

Alston A. J., & English C. W. (2007). Technology-enhanced agricultural education learning environments: an assessment of student perceptions. *Journal of Agricultural Education 48*(4) pp. 1 – 10 DOI: 10.5032/jae.2007.04001

Botsch, C., & Botsch, R. (2001). Audiences and outcomes in online and traditional American Government classes: A comparative two-year case study. PS: Political Science and Politics, 34, 135-141.

Chinnery, G. M. (2006). Going to the MALL: Mobile assisted language learning. *Language learning & technology*, 10(1), 9-16.

Dick, L. (2011). Riffing on The Pied Piper: Combining research and creativity. In A. Webb (Ed.), *Teaching literature in virtual worlds: Immersive learning in English studies* (pp. 97-107). *Routledge.*

Gravetter, F. J., & Wallnau, L. B. (2007). Statistics for the behavioral sciences (7th ed.). Wadsworth.

Jamil, M., & Shah, J. H. (2011). Technology: its potential effects on teaching in higher education. *New Horizons in Education, 59(1), 38-51*

Prensky, M. (*2001*). "Digital Natives, Digital İmmigrants". *On the Horizon 9* (5). *NCB University Press.*

Kazancı, R. (2012) Using blogs and the internet to improve writing skills in university preparatory classes in teaching English *(MA Thesis)*

Kongchan, S. (2013) How a non-digital-native teacher makes use of Edmodo. *ICT for Language Learning, 5th Edition.*

Kumar P & Kumar, A. (2002). Student opinions on web-enhanced courses. In the proceedings of International Conference on Computers in Education, pp. 1386-1387 vol.2, doi: 10.1109/CIE.2002.1186260.

Lewohl, J.M. (2023). Exploring student perceptions and use of face-to-face classes, technology-enhanced active learning, and online resources. *Int J Educ Technol High Educ. 20*(48). https://doi.org/10.1186/s41239-023-00416-3

Lao, D. T., & Gonzales, D. C. (2005). Understanding online learning through a qualitative description of professors' and students' experiences. Journal of Technology and Teacher Education, 13(3), 459- 474.

Lin, W. C. & Yang, S. C. (2011) Exploring students' perceptions of integrating Wiki technology and peer feedback into English writing courses. *English Teaching: Practice & Critique, (10)*2, p88-103.

Luckin, R., Clark, W., Graber, R., Logan, K., Mee, A., & Oliver, M. (2009). Do

Web 2.0 tools really open the door to learning: Practices, perceptions and profiles of 11–16-year-old learners? *Learning Media and Technology, 34(2),* 87 -104

Miller, V. (2011). Understanding digital culture. *SAGE.*

Miyazoe, T. & Anderson, T. (2010). Empirical research on learners' perceptions: Interaction equivalency theorem in blended learning, with Terry Anderson. *European Journal of Open, Distance and E-Learning.*

Sanders, D. W. & Morrison-Shetlar, A. I. (2001). Student attitudes toward Web-enhanced instruction in an introductory Biology course. *Journal of Research on computing in Education 33*(3), 251-262.

Strambi, A. (2004). Learners' perceptions of a web-enhanced learning environment: Insights from a longitudinal study. *Australian Review of Applied Linguistics. Supplement Series, 18* (1). p. 81- 96. https://doi.org/10.1075/aralss.18.06str

Türkmen, H. G. (2012). Using social networking in EFL classroom in higher education. *The 8th International Scientific Conference eLearning and software for Education.*

Wahyuni, S., & Hakiki, E.B. (2023). Students' perception on the use of web-based technology for learning English skills at university. *ELITE Journal, 5*(1), 183-194.

Warschauer, M. (1996). Comparing face-to-face and electronic communication in the second language classroom. *CALICO Journal, 13(2),* 7-26.

Zorko, V. (2009). Factors affecting the way students collaborate in a wiki for English language learning. *Australasian Journal of Educational Technology,* 25(5), 645-665.

Yıldırım, H. (2002). *Student perceptions on a Web–enhanced introductory chemistry course: A case study*. (Unpublished Master's Thesis), Middle East Technical University, Turkey

Yin, R.K. (2009*). Case study research, design and method*. Sage.

CHAPTER 2

SYNERGIZING 21ST-CENTURY SKILLS AND SELF-REGULATION: A THEORETICAL BLUEPRINT FOR PERSONAL AND PROFESSIONAL EXCELLENCE

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Introduction

In today's world, 21st Centrury Skills (21CS) are among the most discussed topics in the field of education. In this age of knowledge and communication century, individuals are expected to possess numerous competencies considered as global skills. These competencies include problem-solving, critical thinking, collaboration, effective communication ability, leadership, innovation and creativity, adaptability to knowledge and technological advancements, flexibility, resilience, and the ability to continuous self-improvement. Each of these competencies is perceived as essential for the personal growth of the future generation. Hence, today, in designing school curriculum specialists' main emphasis is on the development of these specific competencies in conjunction with regular school curriculum. In this section, starting from certain theoretical definitions and classifications of 21CS, individuals' processes of acquiring these skills through self-regulation development is discussed.

When we examine the research carried out on 21CS skills from the early 2000s to the present, it is noteworthy that there has been a substantial growth in the number of skills offered in recent years compared to the 2000s. During the early 2000s, skills were characterized by a broader and more individual-centric perspective, focusing on essential competencies and social adaptability of individuals. However, due to the rapid and profound changes and advancements in the first part of the 21st century, there has been a discernible escalation in the range of skills individuals are expected to possess. Educators posit that schools are contributing to the acquisition of an expanding array of skills on a daily basis, while business leaders and corporations assert that the skillset they associate with employees' readiness for the 21st-century job market should be cultivated as enduring personality traits, commencing from the preschool phase of education (OECD, 2012; Wagner, 2008). Educators find themselves under growing pressure from business leaders and corporations who argue that the conventional focus on vocational skills within educational curricula is insufficient to adequately prepare individuals for the demands of the contemporary labor market. This shift in perspective is rooted in the recognition that the job landscape of the 21st century has evolved significantly, driven by technological advancements, globalization, and changing economic paradigms. Consequently, employers now place greater emphasis on hiring individuals with a multifaceted skillset that extends beyond the technical competencies associated with specific job roles.

In this context, educators are being urged to rethink their pedagogical approaches and curricular designs to foster a more comprehensive set of skills and qualifications in students. The idea is to nurture individuals who are not only proficient in their chosen vocations but are also equipped

with a broader array of attributes, including critical thinking, adaptability, communication skills, creativity, and a strong foundation in digital literacy. These qualities are increasingly seen as essential for success in a world where jobs are continually evolving, and the ability to learn and adapt quickly is paramount. Furthermore, the call for instilling these skills as lifelong personality traits starting from preschool is grounded in the belief that early education forms the backbone of a person's development. By introducing these skills at an early age, individuals can grow up with a holistic skillset that becomes an integral part of their identity. This approach not only enhances their employability but also fosters a culture of lifelong learning and personal development (Kiraz, 2022).

In essence, the evolving dynamics of the 21C job market necessitate a shift in educational priorities. Educators are confronted with the challenge of not only imparting knowledge and technical skills but also nurturing a more versatile and adaptable workforce (Yılmaz-Yıldız and Kiraz, 2022). This shift towards a more holistic educational approach, beginning in the preschool years, has the potential to equip individuals with the skills and qualities required to thrive in a rapidly changing world of work.

The lack of clear and consistent understanding of terms or concepts

In this context, educational systems have set emphasis and aim to prepare students for the 21C with not only cognitive skills but also advanced critical thinking skills and self-regulation skills (Orhan-Göksun, 2016). However, there is still no clear consensus about skill definitions. In the literature, the presence of many similar skill labels as 21CS and the lack of a systematic perspective create some problems for educators. Differences in terminology for similar skills or variations in defining different skills that appear to be the same lead to conceptual confusion. For example, when the concept of critical thinking is mentioned, dozens or even hundreds of definitions come to mind. In its most general definition, critical thinking includes understanding, analyzing, applying, operationalizing, delving deep into knowledge, reaching logical conclusions, and evaluating knowledge within a context rather than superficially accepting it. Another definition expresses this skill as thinking open-mindedly, logically, and independently when dealing with any subject or knowledge. When the definitions of this concept are carefully examined, it is seen that there are many sub-definitions under the general definition. In this case, when an individual with critical thinking skills is mentioned, it becomes necessary for him or her to acquire all sub-dimensions of the skill. For example, when taken together with a few sub-dimensions, an individual who can think critically can also develop the skills of in-depth examination, scrutinizing information

instead of accepting it immediately, thinking logically and independently, and being able to apply knowledge. Similar examples can be multiplied. The absence of a unanimous agreement in reaching a clear understanding of the concepts related to 21CS cannot be overlooked.

The 21C Skills and Values Research Report presented by the Board of Education and (TTKB) in 2023 states that skills lack a systematic and theoretical framework:

In the literature, there are numerous theoretical frameworks developed by various organizations and researchers to define and classify 21CS... When examining systematic research on the theoretical frameworks focusing on 21CS …it can be observed that there is no internationally accepted common analytical theoretical framework that comprehensively conceptualizes, defines, classifies, and systematizes these skills (p. 2).

Taking this viewpoint into account, it becomes imperative to methodically delineate the skills that hold greater significance for the 21C within educational curricula and teaching methodologies, along with the subsidiary facets that strengthen these skills. Within the same report, certain theoretical frameworks, rationales, and classifications come to the forefront

...some of the existing theoretical frameworks have gained more prominence and wider acceptance in the literature than others. For example, the "P21 Framework for 21C Learning" developed by "the Partnership for 21C Learning" has been widely adopted by researchers due to its thematic relevance and well-structured nature in addressing the realities and needs of the 21C... The P21 Framework categorizes 21CS into three categories and includes 12 different types of skills under these categories. The main categories in this framework are learning and innovation skills, information, media and technology skills, and life and career skills. Within each of these categories:

• creativity and innovation, critical thinking and problem solving, communication and collaboration (learning and innovation skills),

• information literacy, media literacy, ICT literacy (information, media, and technology skills),

• flexibility, initiative, self-direction, social and cross-cultural skills, productivity and accountability, leadership, and responsibility (life and career skills) are included (p. 2).

Similar to the three-category description above, the Assessment and Teaching of 21C Skills (ATC21S, 2010) also includes clear and explicit descriptions. In the ATC21S framework, 21CS are grouped into four main categories, and this framework is constructed with 10 types of skills within

these categories...

• ways of thinking (creativity and innovation, critical thinking, problem solving and decision making, learning to learn, and metacognition),

• ways of working (communication, collaboration, teamwork),

• tools for working (information literacy, ICT literacy),

• living in the world (citizenship, life and career skills, personal and social responsibilities) (Binkley et al., 2012 in TTKB, 2023, p. 2).

Highlighting these competencies in contemporary education is crucial to guarantee that forthcoming individuals possess a robust set of skills. However, reshaping, altering, and organizing self and societal life through education takes many years. Seeing the real results of success or failure made in educational decisions almost takes a generation. Hence, it is quite challenging to ascertain the effectiveness of a teaching method or skill development employed in present-day schools solely through year-end examinations conducted using assessment instruments. It is even more challenging to observe the acquisition of these skills, especially those referred to as 21CS. This is because the attainment of these skills should be regarded in terms of observation, outcomes, and product.

Suppose educators have devised and executed programs, ultimately producing graduates who fulfill companies' expectations. Companies and the private sector are seeking future employees to possess 21CS, but do they have a clear vision of the kind of company or employer they will evolve into in the future? Nevertheless, the inquiry regarding the shape of the future business world remains a matter that requires attention. Will 21CS, just like new approaches that emerged in the early 2000s, such as Howard Gardner's theory of multiple intelligences mentioned in 1983, gradually lose their significance over time? The theory of multiple intelligences was extensively studied in both the field of education and scientific research at the time. However, today, there is almost no research on this topic, and multiple intelligences are no longer discussed among educators. Likewise, constructivism, once a prevalent approach in education and even responsible for curriculum program changes in the 2000s, is now a phenomenon that receives less emphasis. If we look a bit further into the past, behaviorism, a theory that had a profound impact on educational systems in the 1950s, is now a theory that education systems seek to distance themselves from. Hence, it is worthwhile to contemplate whether widely accepted approaches, practices, or theories from earlier times have genuinely diminished in significance, were forsaken due to perceived ineffectiveness, or accomplished their objectives and subsequently waned in popularity.

An Overview of 21st Century Skills

The prominence of 21CS in the future may follow an interesting trajectory. While these skills are currently highly emphasized in contemporary society, it is possible that over time, they could become so deeply ingrained in our collective consciousness that they start to lose their distinct significance. As we integrate these concepts more thoroughly into various aspects of life, the education community, and the business world, they may become more of an assumed foundation rather than a novel set of skills. In this potential future scenario, it is conceivable that only a minority of society will continue to actively embrace and champion these 21st-century skills, while the rest of the population begins to pursue new and evolving competencies and aptitudes. This shift could lead to a diversification of skillsets and priorities, where what we currently label as 21CS may become just one facet of a broader range of essential abilities.

However, it is important to note that the association of individual, social, and emotional skills with the 21st century, as depicted in contemporary literature, invites critical inquiry. When we delve into the annals of history and reflect upon the past millennia, it becomes apparent that the enduring skills and attributes central to the present day, such as critical thinking, communication, adaptability, and empathy, had already been integrated into educational systems and societal life nearly 2500 years ago. Philosophers, educators, and civilizations of antiquity recognized the value of these skills and sought to cultivate them in their citizens. In essence, while the term "21st-century skills" may evolve and change in prominence over time, the underlying principles of these skills have deep historical roots and have always been integral to human development and progress. The challenge for education and society lies not only in adapting to contemporary demands but also in recognizing the timeless relevance of these core abilities that have shaped our journey through history. This is exemplified by Confucius' philosophy in the 6th century BC, as discussed in Leonard Tan's 2016 article, "Confucius: Philosopher of Twenty-first Century Skills. Among these abilities are profound contemplation, critical thinking, knowledge application, synthesis, effective communication, collaborative work, and patient inquiry. Notably, creativity stands out as the sole skill in today's world that possesses tangible value and concreteness, whereas Confucius believed that creativity represents an ethical pursuit and a means to foster a better world (Lucas, 2019). In ancient times, for example, in Ancient Greece, Socrates' teachings emphasized self-criticism and conscious thinking, with the "know thyself" doctrine focusing on individuals' behaviors after an in-depth examination of their thought processes. After knowing oneself, the emphasis was on developing moral virtues. In Ancient Rome, Stoic philosophy taught self-regulation, rational

thinking, and emotional balance, helping individuals control their physical and emotional responses and develop inner resilience in the face of environmental challenges. It is strikingly apparent that while the abilities often categorized as 21CS skills may seem modern and emblematic of our current era, they in fact have a lineage that extends far beyond the confines of the 21st century. These skills have been valued and cultivated by civilizations throughout the millennia. They have consistently held a prominent place in the development of individuals and societies, evolving alongside the changing dynamics of human existence. What makes these skills particularly remarkable is their enduring relevance and applicability. They are not merely a product of contemporary educational or professional needs; instead, they have transcended time and maintained their position as vital attributes on societal agendas. These enduring skills are fundamental to human progress, shaping the way we interact with the world, solve complex challenges, and navigate the ever-evolving landscape of the 21st and, indeed, the 22nd century. As we embark on the journey into the future, it is imperative to recognize that these skills, deeply rooted in our shared history, will continue to serve as the bedrock of human achievement. They are not bound by the constraints of a particular century but rather represent timeless qualities that will continue to empower individuals and societies to thrive, adapt, and innovate in the face of whatever challenges and opportunities the 22nd century may hold. In essence, these abilities are a testament to the enduring nature of human excellence and the capacity to build upon the wisdom of the past to shape a brighter future.

Key Highlights

Nevertheless, in the present day, when skills inherently timeless are branded as 21CS, and if we aim for upcoming generations to possess these skills through educational institutions, educators, and self-driven learning, it becomes essential to grasp the distinctions between the 21st-century and the 20th century, as well as between the 20th century and the 19th century. While these skills are timeless, they have undergone significant evolution, particularly in the past two centuries, driven by the rapid advancements of the Industrial Revolution and modernization processes. The Industrial Revolution hastened transformations in societal lifestyles and demanded that individuals equip themselves with elevated qualifications for economic and social roles.

In this regard, it is vital to comprehend the role that present-day schools and educators play in nurturing generations endowed with 21CS. From our perspective, two key points warrant emphasis: (1) what aspects will remain constant in the 21C when juxtaposed with earlier eras, and (2) whether students themselves will cultivate 21CS as an integral part of their own learning and attain them through the educational process. While address-

ing what will remain unchanged in the 21C in educational programs is essential, it is also necessary to develop programs that are aware of changes and can adapt to them. Schools have been institutions where knowledge and skills have developed for thousands of years. As knowledge and skills evolve, the role of schools and learners also changes. The 21C is often referred to as the "age of information and technology," the "digital age," or the "technology age." Predicting what will not change in this age is not difficult. Lucas (2019) summarizes the conditions that are likely to remain unchanged and widely accepted by many people in seven points:

1. The increasing complexity of problems such as climate change, global migration, and growing resistance to life-saving drugs.

2. The ubiquity of data – it was never possible for schools to teach everything, and these days they are selecting from an ever-expanding menu.

3. The proliferation of knowledge sources from the Internet and the wider digital world.

4. The increasing interconnectedness and global nature of our relationships.

5. The potential of automation via Artificial Intelligence and its impact, often contested, on life and work.

6. Increased self-employment.

7. An aging society.

In response to each of these elements, it can be argued that the kinds of capabilities, competencies, or dispositions we need are likely to include:

1. Complex problem-solving that is frequently multi- and inter-disciplinary by nature and always ethically driven.

2. Critical thinking and high-level project and time management.

3. Digital literacy, design, and computational thinking.

4. Intercultural collaborative problem-solving and emotional and social intelligence.

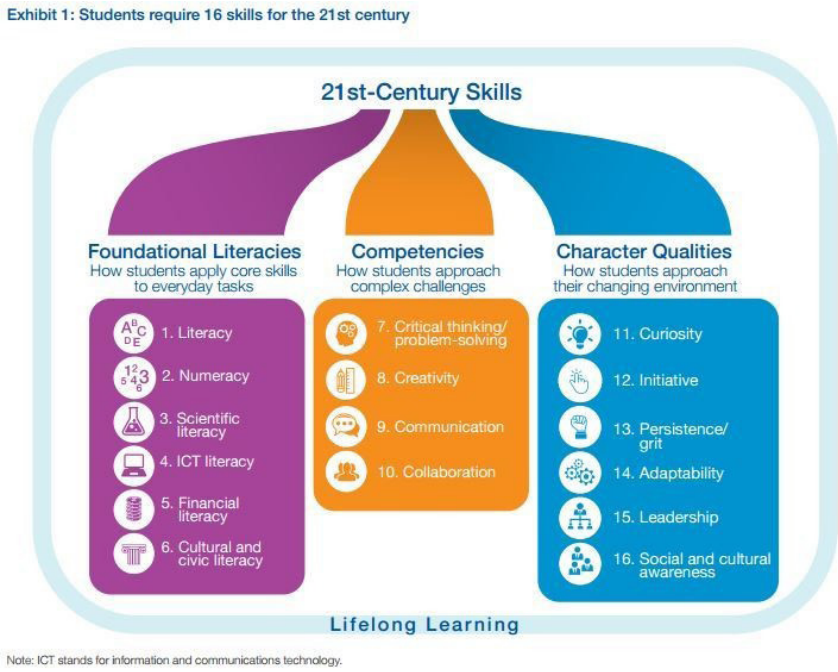
5. Creativity, adaptability, metacognition.

6. Creativity, communication, adaptability.

7. Learning to learn (p. 7).

As seen, in the age of technology in the 21C, traditional classrooms will turn into digital platforms. A report published on March 10, 2016, named "New Vision for Education: Fostering Social and Emotional Learning through Technology," underscores the significance of technology while

also prompting queries about its ability to effectively nurture competencies and character traits alongside cognitive skills.. The report suggests 16 skills that should be acquired in response to these questions:



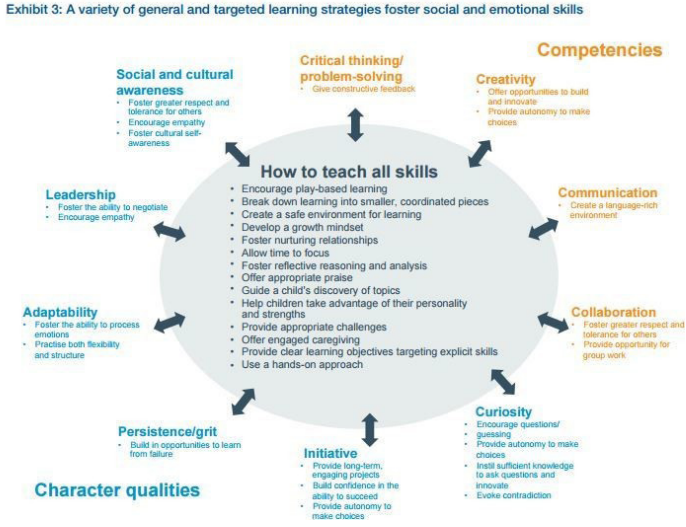
https://www3.weforum.org/docs/WEF_New_Vision_for_Education.pdf, *(p. 4)*

While the focus here is on 21CS translated as lifelong learning, the emphasis is on how students should approach subjects and how they should adapt to changing environments. However, the most important question is how students will acquire these skills. Although the guidance of teachers, parents, and peers plays a crucial role in imparting skills, individuals can autonomously structure their own learning if they possess effective learning strategies, culminating in the internalization and sustainability of skill acquisition.

The 21C represents a period where humanity is adapting to a rapidly changing technological era. In this era, having new skills referred to as 21CS is becoming increasingly important in addition to traditional knowledge and abilities for achieving success. Technology become a fundamental component. Children must develop the ability to use technology to access information, solve problems, and create creative projects. These skills will help them remain competitive in the future job market. The learning process would be more engaging and effective with the proper use of tech-

nology. However, for all of this to occur, it requires individuals to take leadership of their own learning processes. Regardless of whether a student is working independently or within a group, they must possess the attributes necessary to self-manage their learning, as they will encounter both social and technological interactions.

During this phase, it becomes essential to highlight the importance of acquiring self-regulation skills. The key is to facilitate the individual in nurturing their self-regulation abilities and empowering them to steer their own learning process. Self-regulation skills, encompassing an individual's capacity to handle time, establish objectives, self-motivate, and oversee their learning processes, will be of greater significance than ever before. These skills are indispensable in the complex world of the 21C. When combined with technology, self-regulation skills provide students with the tools they need to guide their own learning journeys. 21CS, technology, and self-regulation skills are critical factors influencing children's success. These skills provide a significant advantage for advanced children. However, these skills should be cultivated as a part of every child's learning process. Educators, parents, and society as a whole should support children in acquiring these skills. This way, the younger generations will better align with the demands of the technology era and increase their achievements. 21CS appear to be straightforward on paper but actually require a complex process for acquisition. The following diagram visually illustrates strategies for learning these skills and simplifies comprehension.



https://www3.weforum.org/docs/WEF_New_Vision_for_Education.pdf, *(p. 8)*

Upon careful examination of the diagram above, it apparently related to self-regulation. Self-regulated learning concentrates on the socio-cognitive perspective that is distinctive in viewing self-regulation as an interaction of personal, behavioral, and environmental processes (Bandura, 1986; cited in Zimmerman, 2000).

Unlocking the Power of Self-Regulation

According to Zimmerman (2002), self-regulation is not "a mental ability or an academic performance skill" but "the process of self-direction in which students transform their mental abilities into academic skills." Pintrich elucidates that as an engaged and constructive procedure where learners establish learning objectives and then endeavor to oversee, adjust, and manage their thinking, drive, and conduct in accordance with their goals and motivations, guided and limited by them (2000). Nakata (2019) also supports that understanding the mechanisms of how students learn or self-regulate their learning is part of knowing why and how we teach ourselves, and therefore, learning from self-regulated learning theories is likely to be one of the most important topics in the 21st-century agenda. Regulated learning is when the person takes responsibility for his or her own learning processes in the cognitive and affective domains together.

Self-regulated learning theories suggest that students can

(a) individually enhance their learning abilities by selectively applying metacognitive and motivational tactics.

(b) actively choose, organize, and even craft favorable learning settings, as well as...

(c) wield significant influence in determining the type and quantity of instruction they require..

This definition contrasts with those that highlight a solitary characteristic, skill, or phase of proficiency, focusing instead on actions and underlying processes that are shaped by an individual's beliefs and motivations (Zimmerman, 2000).

21CS necessitate that the development of good self-regulation skills is evitable for learners. Therefore, the field of self-regulation has attracted scholars, hence, different theoretical views bloomed. As a result, today there are many self-regulating principles exist based on metacognitive, constructivist, social-cognitive, phenomenological, attributional, Vygotskian, operant, and volitional theories (Shunk and Zimmerman, 1994).

Perry et al. (2006) indicate that self-regulated learners are students who are "aware of their academic strengths and weaknesses and have strategies they can use to meet the demands of challenging tasks in the class-

room" (p. 238 Cited in Nakata, 2019). While cognitive constructivists and adherents of Vygotsky's theory concur that most elementary school-aged children are capable of self-regulation, they employ divergent pedagogical approaches. (Paris, Byrnes, & Paris, 2001). Some students cannot learn or use learning activities independently (Vermunt and Verloop 1999). However, teachers (Boekaerts 1997; Dignath and Büttner, 2008; Black et al. 2006) can train self-regulated learning. In early childhood, sensitivity to the goals and standards held by others is increased and children are motivated to meet these standards and demonstrate their competence. During middle childhood, a shift from external expectations to "self-guides" begins and children begin to follow their idealized selves (Paris, Paris, and Byrnes 2001). Hence, it is prudent to initiate the teaching of self-regulation skills to students at the earliest feasible stage (Stoeger and Ziegler 2008 in Smul, Heirweg, Devos and Keer, 2019). Perceptions of competence have a strong influence on children's motivation and the organization of actions in the classroom. Children who perceive themselves as competent are more likely to cope and use the skills and strategies they have when they encounter difficulties (Harter, 1990; Pintrich & Schrauben, 1992, cited in Paris, Paris & Byrnes, 2001). They participate in academic tasks more easily, choose challenging tasks, are not discouraged by failure, and improve their skills to reach a higher level by working harder (Pintrich & Schunk, 1996; Schunk & Zimmerman, 1997; Cited in Paris, Paris & Byrnes, 2001).

There have been various studies conducted in Turkey related to self-regulation. While these studies may not be directly linked to 21CS, they serve as valuable resources for the acquisition of skills by individuals themselves. Studies related to self-regulated learning in teacher education in Turkey have been conducted since 2000. In Güler's semi-experimental study conducted in 2012-2013, Zimmerman's self-regulated learning processes were applied. In the pre-action phase, the study aimed to facilitate strategic planning, particularly in terms of goal setting and organizing. During the action phase, the study focused on identifying environmental regulations and learning strategies. In the post-action phase, reflective skills that complete the learning cycle were associated with participation in other studies. Çetin's empirical study in 2013, titled "The Use of Hypermedia in Developing the Nature of Science Understanding of Science Teacher Candidates: Examination of the Self-Regulation Factor," self-regulation training was provided to one group (Experiment 1), while the other group (Experiment 2) did not receive such training. Experiment 2 group scored higher in goal setting and planning in the pre-action phase of Zimmerman's model. In the action phase, the Experiment 2 group exhibited more self-regulated behaviors, such as monitoring the learning process, strategies used, and time. They also used strategies like repetition, re-

viewing notes, note-taking, and goal-oriented searching more frequently. Kayacan's study in 2014, involving teacher candidates enriched with research-based inquiry teaching strategies and self-regulated learning activities, showed significant differences between pre-test and post-test scores in conceptual assessment tests. The group that received research-based inquiry teaching strategies enriched with self-regulated learning activities demonstrated the highest improvement in conceptual learning. Before the intervention, there was no significant difference in academic self-efficacy scores among teacher candidates.

Bayram and Sarıbaş (2009) also found that teaching self-regulated learning strategies in a laboratory setting enhanced conceptual understanding and cognitive processing skills (Kayacan, 2014). The study emphasized the importance of strategic planning and environmental regulations in the pre-action phase and the use of learning strategies, time management, and seeking help in the action phase. In the post-action phase, self-assessment and self-judgment were observed among students. Ekici's study in 2015, focusing on the development of self-regulated learning skills in chemistry teacher candidates through basic learning strategy instruction, found that the use of self-regulated learning strategies increased. The study highlighted the importance of teaching strategies related to self-regulation in improving self-regulated learning skills (Ekici, 2015). Ulutaş (2016) also conducted a study to examine the changes in motivation among chemistry teacher candidates in a self-regulated learning environment using qualitative analyses. The results showed that chemistry teacher candidates had positive motivational beliefs, increased persistence in academic activities, and diversified their motivation-related strategies as they developed their writing skills. They also used self-regulated learning strategies effectively (Ulutaş, 2016).

In addition to studies related to teacher candidates' self-regulation, studies by Taşkın and Doğan (2009) indicated that primary school teachers lacked sufficient knowledge about self-regulated learning, and therefore, they only implemented some related activities. Akınoğlu and Sarı (2009) highlighted the lifelong applicability of self-regulated learning strategies introduced at the primary education level and emphasized the need for teacher education in this regard. When examining the impact of Pintrich's self-regulated learning model on elementary education teacher candidates in a life sciences teaching course, it was found that training activities based on Pintrich's model increased the self-regulated learning perceptions of future teachers (Çetin, 2017).

Regarding knowledge and skills, some researchers have emphasized that teachers may not know which strategies to use (Griffin et al., 2012) or how to teach these strategies (Dignath and Buttner, 2018, as cited in

Callan and Shim, 2019). A study by Haşlaman and Aşkar (2007) revealed that self-regulated learning strategies, including goal setting, repetition, self-reflection, self-efficacy, effort regulation, collaborative learning, and time management, explained 71% of students' success (Çiltaş, 2011).

Sağırlı and Azapağası (2010) investigated whether university students effectively used self-regulation skills and identified activities students engaged in to regulate their self-regulation skills. The results showed that students used self-regulated learning strategies in learning, such as cognitive self-regulation, environmental structuring, rehearsal, elaboration, peer learning, organization, and seeking help demonstrated changes in motivation-related factors, including test anxiety control, learning beliefs, self-efficacy, goal orientation, and task value (Çiltaş, 2011).

Conclusion

This in-depth examination reveals a strong connection between 21CS and self-regulation, which can significantly enhance both personal and professional achievements. These skills can complement each other and assist individuals in succeeding in a rapidly changing and competitive world. Therefore, education systems and individuals should focus on developing and using these skills together. For instance, critical thinking, often regarded as a fundamental 21st-century skill, is the capacity to engage in reflective and analytical thinking. It involves questioning assumptions, evaluating evidence, and arriving at reasoned conclusions. This cognitive process closely intertwines with self-regulation, creating a symbiotic relationship that has a profound impact on an individual's intellectual and emotional development. When individuals actively cultivate critical thinking abilities, they simultaneously embark on a journey of self-regulation. Critical thinking encourages individuals to control and direct their thought processes effectively. It teaches them to be deliberate in their thinking, allowing them to focus on relevant information while filtering out distractions and biases. Self-regulation is the key to maintaining this control consistently over time. Critical thinking equips individuals with the ability to recognize and challenge deceptive thought patterns such as cognitive biases, emotional reasoning, and fallacious reasoning. Self-regulation plays a pivotal role in helping individuals identify and address these patterns within themselves. Moreover, critical thinking is ultimately about reaching logical and evidence-based conclusions. Self-regulation is essential to ensure that emotions, impulsivity, or external pressures do not cloud one's judgment. It helps individuals stay focused on the objective analysis of information, leading to more accurate and rational decision-making.

Critical thinking, a cornerstone of 21CS, demands the careful regulation of one's thoughts and emotions to uphold objectivity, intellectual

integrity, and logical consistency. In this context, the practice of critical thinking serves as a structured framework for enhancing and stimulating self-regulation. This mutually beneficial relationship between critical thinking and self-regulation transcends mere intellectual endeavors. It nurtures personal development by nurturing emotional intelligence, resilience, and adaptability across various facets of life. In an era characterized by information saturation and rapid transformations, these proficiencies become priceless assets, empowering individuals to adeptly navigate intricate challenges and make well-informed decisions.

Effective communication stands as a pivotal skill in the 21C with far-reaching implications for personal and professional success. It extends beyond mere verbal exchanges and encompasses the capacity to convey ideas, emotions, and information proficiently and empathetically. The synergy between communication skills and self-regulation is profound. Effective communication entails not only articulating thoughts but also understanding and managing emotions, both in oneself and in others. Emotional intelligence, which is vital for effective communication, is closely tied to self-regulation. Self-awareness and the ability to control emotional responses during conversations are critical aspects of both emotional intelligence and self-regulation. In addition, empathy, active listening, a hallmark of skilled communicators, demand not only hearing but also comprehending and empathizing with the speaker's viewpoint. This active engagement necessitates self-regulation to avoid interrupting, manage one's internal dialogue, and remain fully attentive. Also, effective communication often relies on well-timed and organized interactions. Time management and communication planning are integral components of this process.

In the rapidly evolving landscape of the 21C, individuals who master this interplay between skills and self-regulation are better equipped to navigate diverse and dynamic environments while fostering meaningful learning. The most crucial advice on this matter is that both pre-service and in-service training for teachers should be emphasized. Workshops and training sessions should be conducted for teachers on how self-regulation can be developed. More importantly, instead of attempting to teach children self-regulation directly, improvements should be made in the curriculum and course design, allowing students to acquire these skills progressively throughout the process.

This comprehensive exploration underscores the profound connection between 21CS and self-regulation, elucidating their potential to significantly enhance personal and professional achievements. These skills are not isolated entities but rather interdependent attributes that can synergize to empower individuals in a rapidly evolving and highly competitive world. Consequently, it is imperative for both education systems and individuals

to prioritize the simultaneous development and utilization of these skills.

The practice of critical thinking serves as a structured framework for enhancing and stimulating self-regulation. Turning to effective communication, a pivotal 21CS skill with far-reaching implications for personal and professional success, we find another profound synergy with self-regulation. Within this context, the connection between communication skills and self-regulation is profound. Emotional intelligence is also closely intertwined with self-regulation. Self-awareness and the ability to control emotional responses during conversations are critical facets of both emotional intelligence and self-regulation. Additionally, effective communication often relies on well-timed and organized interactions, where time management and communication planning are integral components.

In conclusion, the intricate relationship between 21st-century skills and self-regulation serves as an equilibrium for personal and professional success in the modern era. Recognizing and nurturing this interdependence is vital for individuals and educational institutions alike, as it equips us to thrive in a world characterized by complexity, change, and constant communication.

References

Akınoğlu, O. and Sarı, A. (2009**).** Öz-Düzenlemeli Öğrenme: Modeller ve Uygulamalar *M.Ü. Atatürk Eğitim Fakültesi Eğitim Bilimleri Dergisi.* 29, 139-154.

Black , P. , Mc Cormick, R., James, M. and Pedder, D. (2006) Learning How to Learn and Assessment for Learning: a theoretical inquiry, *Research Papers in Education*, 21, 119-132.

Boekaerts, M. (1997). Self-regulated learning: A new concept embraced by researchers, policy makers, educators, teachers, and students. *Learning and Instruction*, (7) 2, 161-186.

L. Callan, G. L and Shim, S. S. (2019). How teachers define and identify self-regulated Learning. *The Teacher Educator*, (54) 3, 295-312.

Çetin, B. (2017). The influence of pintrich's self-regulated learning model on elementaryteacher candidates in a life science course. *Journal of Education and Training Studies*. 5(8), 30-36.

Doğan, F. and Şahin Taşkın Ç. (2009). İlkokul Öğrencilerinin Öz-düzenlemeli Öğrenme Becerilerinin Geliştirilmesi: Sınıf Öğretmenlerinin Görüşleri M.Ü. Atatürk Eğitim Fakültesi Eğitim Bilimleri Dergisi, 29, 139-154.

Dignath, C., Büttner, G. (2008). Components of fostering self-regulated learning among students. A meta-analysis on intervention studies at primary and secondary school level. *Metacognition Learning* 3, 231–264.

Ekici, F. (2015). Kimya Öğretmen Adaylarında Özdüzenlemeli ÖğrenmeBecerilerinin Geliştirilmesine Yönelik Temel Öğrenme Stratejileri Öğretimi. Gazi Üniversitesi Eğitim Bilimleri Enstitüsü *Yayınlanmamış Doktora Tezi*: Ankara.

Griffin, P., McGaw, B., & Care, E. (2012). The Changing Role of Education and Schools. In P. Griffin, B. McGaw, & E. Care (Eds.), *Assessment and Teaching of 21st Century Skills*, 1-16.

Güler, B. (2013). Karma Öğrenme Yönteminin İlköğretim Fen ve Teknoloji Öğretmen Adaylarının Teknolojiye Yönelik Tutumlarına ve Özdüzenleme ve Bilimsel Süreç Becerilerine Etkisi. Dokuz Eylül Üniversitesi Eğitim Bilimleri Enstitüsü İlköğretim Anabilim Dalı Fen Bilgisi Öğretmenliği Programı *Yayınlanmamış Yüksek Lisans Tezi*, İzmir.

Haslaman, T. and Askar, P. (2007). Programlama Dersi ile İlgili Özdüzenleyici Öğrenme Stratejileri ve Başarı Arasındaki İlişkinin İncelenmesi. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi*, 32, 110 - 122.

Haşlaman T., (2018). Öğrencilerin Özdüzenleyici Öğrenen Olmalarının İnfografik Aracılığıyla Desteklenmesi: Nasıl Daha İyi Öğrenebilirim*? Elementary Education Online*, 17(1), 277-292.

İmer Çetin, N. (2013). Fen Bilgisi Öğretmen Adaylarının Bilimin Doğası An-

layışlarının Geliştirilmesinde Hipermedyanın Kullanılması: Özdüzenleme Faktörünün İncelenmesi Gazi Üniversitesi Eğitim Bilimleri Enstitüsü İlköğretim Anabilim Dalı Fen Bilgisi Eğitimi Bilim Dalı *Yayınlanmamış Doktora Tezi*: Ankara.

Kayacan, K. (2014). Özdüzenleme Faaliyetleri ile Zenginleştirilmiş Araştırma-Sorgulamaya Dayalı Öğretim Stratejisinin Fen Bilgisi Öğretmen Adaylarının Kuvvet ve Hareket Konusunu Kavramsal Anlamalarına ve Akademik Özyeterliklerine Etkisi *Yayınlanmamış Doktora Tezi* Gazi Üniversitesi, Ankara.

Kiraz, E. (2022). *Program Geliştirme ve Öğretim: Uzmanlık Uygulamaları* (Ders Notları). Çanakkale: Çanakkale Onsekiz Mart Üniversitesi, Eğitim Programları ve Öğretim Bölümü.

Lucas, B. (2019). Why we need to stop talking about twenty-first century skills. Retreived from https://www.researchgate.net/publication/332864663_Why_we_need_to_stop_talking_about_twenty-first_century_skills.

Nakata,Y. (2019). Encouraging student teachers to support self-regulated learning: A multiple case study on prospective language teachers. *International Journal of Educational Research* 95, 200-211.

OECD (The Organization for Economic Co-operation and Development). (2012). Connected minds: Technology and today's learners, educational research and innovation. Retrieved from OECD Publishing. https://www.oecdilibrary.org/education/connected-minds_9789264111011-skills.

Orhan Göksün, D., and Kurt, A. (2017). Öğretmen Adaylarının 21. yy. Öğrenen Becerileri Kullanımları ve 21. yy. Öğreten Becerileri Kullanımları Arasındaki İlişki. Eğitim ve Bilim, 42(190). doi:http://dx.doi.org/10.15390/EB.2017.7089

Paris, S. G, Paris, A. H. ve Byrnes, J.P (2001). Construction theories, identities and actions of Self-regulated learners (Chapter: 8). Editors: Zimmerman, B.J. and Shunk, *Self regulated learning and academic achivement, therotical perspective,* London.

Pintrich, P. R. (2000). The role of goal orientation in self-regulated learning.Editors: M. Boekaerts, P. R. Pintrich, & M. Zeidner*, Handbook ofself-regulation.* San Diego, CA: Academic.

Saribas, D. and Bayram, H. (2009). Is it possible to improve science process skills and attitudes towards chemistry through the development of metacognitive skills embedded within a motivated chemistry lab?: a self-regulated learning approach. *Procedia - Social and Behavioral Sciences.* 1. 61-72.

Sağırlı, Ö. M. , Azapağası, Ç. A. and Zehir, K. (2010). Yüksek öğretimin öz-düzenlemeyi öğrenme becerilerine etkisi atatürk üniversitesi örneği. *Kastamonu Eğitim Dergisi*, 18 (2), 587-596 . Retrieved from https://dergipark.org.tr/tr/pub/kefdergi/issue/49063/626002

Schunk, D.H. and Zimmerman B.J. (1994). Self regulation in Education: Retro-

spect and Prospect (Chapter:13). *Self Regulated Of Learning And Performans*, Editors: Dale H. Schunk Barry J. Zimmerman, London.

Smul M., Heirweg S., Devos, G. ve Keer H.V.(2019). School and teacher determinants underlying teachers' implementation of self-regulated learning in primary education, *Research Papers in Education*, 34(6), 701-724.

Tan, L (2016), Confucius: Philosopher of twenty-first century skills. *Educational Philosophy and Theory*, 48, 12, 1233–1243.

TTKB (2023). 21. Yüzyıl becerileri ve değerlere yönelik araştırma raporu. Retrieved from https://ttkb.meb.gov.tr/meb_iys_dosyalar/2023_05/11153521_21.yy_becerileri_ve_degerlere_yonelik_arastirma_raporu.pdf

Vermunt, J. D., & Verloop, N. (1999). Congruence and friction between learning and teaching. Learning and Instruction, 9(3), 257–280

Wagner, T. (2008). The global achievement gap: Why even our best schools don't teach the new survival skills our children need-and what we can do about it. *Basic Books*.

WEF (2016). New Vision for Education: Fostering Social and Emotional Learning through Technology. Retrieved in from https://www3.weforum.org/docs/WEF_New_Vision_for_Education.pdf.

Ulutaş B. (2016). Özdüzenlemeli Öğrenme Ortamında Kimya Öğretmen Adaylarının Motivasyonlarının Değişiminin İncelenmesi. *Yayınlanmamış Doktora Tez*i. Gazi Üniversitesi Eğitim Bilimleri Enstitüsü, Ankara.

Yılmaz Yıldız, S.B. ve Kiraz, E. (2022). Yüksek Öğretimde Yeni Bir Modelleme Çalışması: Tarım Üniversiteleri. *Lisans Üstü Çalışmaları Öğretmen Kongresi*. 13-15 Mayıs 2022, Ayvalık-Balıkesir.

Zimmerman B.J. (2000). Attaining Self-regulated a Social Cognitive Perspective)

Editors: M. Boekaerts, P. R. Pintrich, and M. Zeidner , *Handbook of Self Regulation* San Diego, CA: Academic.

Zimmerman, B. J. (2002). Becoming a self-regulated learner: An overview. *Theory into Practice, 41*(2), 64–70.

CHAPTER 3

PARENTAL SELF-EFFICACY AND PARENTAL INTEREST MEDIATING THE RELATIONSHIP BETWEEN SOCIOECONOMIC STATUS AND ACADEMIC COMPETENCE OF CHILDREN

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Introduction

Previous studies tested whether parental self-efficacy and parental interest during processes of socializing, educating and rearing children mediated or managed the association between family socioeconomic status and school-related ability of children. They explored the reasons behind increasing academic performance inequalities and gaps between students from families in lower socioeconomic status and their peers from families in higher socioeconomic status. Research carried out on first and second grade children revealed that maternal education and self-efficacy in socializing and educating their children were directly linked to school-related competence of students. Parental self-efficacy directed the relationship of education associated with students' school-related ability, and university-educated mothers' higher self-efficacy to socialize, educate, and rear their children was positively related to students' school-related ability. As for the South Korean sample, family income was both directly related to students' school-related competence and indirectly related to parents' self-efficacy during socializing, educating and rearing processes.

During lately years, educators and policy makers have increasingly viewed parental educational interest as a means of enhancing the academic performance of students from families in lower socioeconomic status and social class. Education-related laws, such as the No Child Left Behind Act, were designed to foster parents' educational interest (U.S. Department of Education, 2004). Parents attempted to be involved in education of their children and often endeavored to communicate educational aspirations, goals and attitudes to their children. Research largely embraced the view that parental educational involvement and communication of educational aspirations, goals, and attitudes to their children as a form of academic socialization was strongly associated with learning skills and success of children (Park & Holloway, 2013; Sonnenschein & Thompson, 2012).

Although it was asserted that parents from all socioeconomic status categories or all economic and educational backgrounds were engaged in activities that supported learning and academic performance of their children (Baquedano-López et al, 2013; Smith, 2006), research established that it was easier for parents from higher socioeconomic status backgrounds to engage in types of interest valued by schools on the basis of certain forms of human, monetary, and cultural capital they saved (McWayne, 2015). It was also suggested that children from higher socioeconomic status categories and backgrounds were more likely to go schools that were provided with better financial support and employed with more qualified teachers (Crosnoe, 2006). It was hypothesized that parental educational involvement and practices were formed and shaped by various social contexts such as school as well as social classes, communities and cultures within societies (Holloway & Jonas, 2016).

Various studies investigated academic socialization in different societies and cultures and often expressed the strong educational and academic performance of students in international comparative researches (Lewis, Perry, & Murata, 2006). For instance, South Korea and Japan moved closer to achieving equality with regard to providing public funding for the education of students from various socioeconomic status backgrounds compared to most other Organization for OECD (Economic Cooperation and Development) countries (OECD, 2014a, 2014c). Educational policies strived to protect students from the negative influences of socioeconomic status or social class inequalities within the society on socialization and education, and endeavored to ascertain that students' academic performance did not solely depend on family background, socioeconomic status or social class, or at least was less closely associated with such factors. Policies designed to minimize and eliminate the negative impacts of disadvantages and restrictions stemming from family background, socioeconomic status or social class on socialization and education assumed greater importance and priority. By addressing equality of opportunity in education, policy makers and educators accentuated the importance and priority of educational efforts and initiatives aimed at minimizing and eliminating the dependence of students' academic performance on family background, socioeconomic status or social class. In the wake of widening economic inequalities in the last 20 years, academic performance inequalities and gaps between students from lower socioeconomic status backgrounds and their peers from higher socioeconomic status backgrounds began to grab the attention of theorists and politicians (Kariya, 2012). For instance, it was asserted that the discrepancies and gaps in the magnitude of academic performance between students who had advantage and disadvantage in Japan were higher than the OECD average (OECD, 2014b), whereas there were significant SES inequalities or social class discrepancies in educational attainment among South Korean students from lower SES or social classes and those from higher SES or social classes (Shin & Lee, 2010).

The present research aimed to contribute to this literature by exploring the role of parental education and family income, as indicators of socioeconomic status, in shaping both parents' interest in education of their children and their agency or self-efficacy along this process. It also investigated the educational interest of parents and their self-efficacy in socialization, education and rearing processes. Emphasis was placed on the association between the educational interest of parents and their self-efficacy to socialize, educate and rear primary school competencies of their children. It was pointed out that home-based parent interest in children's education was most apparently effective on the educational trajectories of children over the course of primary school years (Crosnoe, 2006). Accordingly, the research focused on children starting primary school as well as their families.

Parents' Interest in Education of Children

The concepts of parental interest and engagement refer to actions undertaken by parents at home and at school in order to enhance and improve academic performance of their children. Parents could directly teach their children at home, help them review school material and thus support their education (Pomerantz, Moorman & Litwack, 2007). Parents were also able to stimulate and foster children's curiosity, support their self-confidence, and encourage and nurture their orientation towards learning, thereby promoting children's motivation to be successful (Bempechat & Shernoff, 2012). Parents' involvement in school allowed them to understand and follow school politics and practices and gain an insight about comparing their children with their peers (Christenson & Sheridan, 2001).

Parental Self-Efficacy during Socialization, Education and Rearing Processes

Self-efficacy was conceptualized as a subset of social cognitive theory and referred to the beliefs that individuals maintained concerning their capacity to exert efforts to control the events or phenomenons in their own lives (Bandura, 1982). Decisions about self-efficacy were shaped in terms of specific domains, and self-efficacy was causally connected to people's later accession to activities in that field. The basic teachings of self-efficacy theory were also supported in a broad range of socio-cultural contexts (Bandura, 2002). Parents' beliefs concerning their self-efficacy in socialization, education, and rearing children were able to strongly determine parental behaviors and actions. Parents with high self-efficacy for socializing, educating and rearing children were able to experience less stress, tension or emotional arousal when they were confronted with a difficult situation in such parenting practices, compared to parents with low self-efficacy. They were inclined to consider it as a challenge, depended more on their own skills to cope with it, and were more likely to display patience, resilience, perseverance, and talent to be able to do so (Jones & Prinz, 2005). Parental self-efficacy during the processes of socializing, educating and rearing children was described as a key decisive of parents' interest in education of their children (Hoover-Dempsey et al., 2005). Studies investigated the role of parental self-efficacy as a predictor of primary school-based skills in socialization, education, and rearing, along with parental interest.

Parental Socialization and Education and Academic Performance of Students

Over the last 30 years, there has been a sharp economic slowdown in societies that has further widened the income gap between rich and not-so-rich citizens. Companies had to convert mostly full-time permanent em-

ployees into part-time positions and attempted to implement wage cuts. It was observed that the gap, inequalities between the highest paid workers and lowest paid workers in the society was gradually widening (Nemoto, 2016). This poor economic image could give rise to class-based reflections and reactions on parents' attitudes towards education and their interest in education of their children. Plenty of working-class parents in the society lost their belief that educational attainment would be a way of getting stable long-term jobs and achieve monetary safety (Kariya, 2012). Socioeconomic status or social class inequalities and discrepancies have gradually increased in societies. Inequalities and differences associated with socioeconomic status continued to exist between parents in lower socioeconomic status and parents in higher socioeconomic status in terms of providing support for education of their children. Mothers from higher socioeconomic status backgrounds seemed to be more effective than parents in lower socioeconomic status parents and were more able to monitor homework of their children, read to them, and also adapt to and keep informed on classroom activities (Yamamoto, 2015). Bearing in mind this connection pattern between socioeconomic status and parental involvement, researchers discovered evidence of strong socioeconomic status-related inequalities and discrepancies in academic motivation and performance of students from first to fifth grade (Kariya, 2012; Yamamoto & Brinton, 2008). 2010). Hence, it was determined that parents' interest in education emerged as an important factor that influenced children's educational and academic performance and mediated the impacts of family socioeconomic status on academic performance of children.

Economic and cultural conditions in societies could impact parental involvement and parental attitude towards education. For instance, South Korea has undergone a relatively sustained economic growth for some decades. 95 % of South Korean parents aspired for their children to obtain a university degree (Shin & Lee, 2010). Students in the society struggled and competed intensely to get into elite universities. Many parents began to carefully manage educational life and academic trajectory of their children as early as preschool. Children from families with higher socioeconomic status were able to employ and benefit from certain advantages in this vying process (Yoon & Cho, 2011). While receiving money from the state, the best schools in the country charged tuition fees from families (OECD, 2014c). Moreover, a great private market for complementary classes and lessons was created in South Korea, with more than 80 % of primary school students taking part in some form of complementary education (Korean Statistical Information Service, 2015a). Thereby, socioeconomic status-related structural conditions were clearly related to the educational opportunities available to students in society. Significant discrepancies in

the economy and educational system of societies could produce distinct dynamics associated with socioeconomic status, social class, family interest in the education of children and academic performance of students.

Present Research

The present research investigated the association between maternal education and family income, as the two main indicators of socioeconomic status, and academic socialization through parental interest in education and parental self-efficacy. Researchers expected to uncover a strong relationship between education of mothers and parental interest (Bierman & Boivin, 2014). It was hypothesized that there was an association between family income and parental interest and parental self-efficacy. Wealthier parents coordinated and integrated their children's regular education with supplementary courses and lessons. This practice called for greater involvement as far as parents were concerned and could also support parents' self-efficacy (Park, Byun & Kim, 2011). Researchers asserted that income in Japan was not expected to significantly predict the way parents socialized, educated and reared their children. Parents of primary school children did not rely heavily on supplementary courses and classes, and accordingly aspirations in terms of parental involvement were assumed to be relatively similar to one another across social classes (Matsuoka, 2015).

The present research focused on whether parents' socioeconomic status and their interest in their children's education were associated with school-related ability of students. It also investigated whether parents' the socioeconomic status and social class and their interest in their children's education were associated with students' school-related ability, such as learning skills, social aptitude, and self-regulatory capacity that necessitated successful academic performance in school. Based on the parental interest literature, researchers hypothesized that socioeconomic status was related to parental interest, which might be linked to school-related competence and tendencies, respectively. Parents' self-efficacy for socializing, educating, and rearing children was considered to be "pan-cultural" and it was assumed that it was associated with students' academic performance and played a mediating role (Yamamoto, Holloway, & Suzuki, 2006; Yoon & Cho, 2011). The objective of the present research was to investigate whether parental interest and parental self-efficacy in socialization, education and rearing processes directed the association between socioeconomic status and school-associated ability of students. The research hypothesized that available and usable human, social and cultural capitals of parents in higher socioeconomic status, with higher income levels, higher education levels and higher occupational status, could enhance the likelihood that parental interest would be beneficial in terms of higher school-associated ability of students.

METHOD

Participants

Three hundred and nine Japanese mothers of first and second grade students from four public primary schools in the metropolitan area of Tokyo participated in the research. Invitation letters were sent to the parents of the students through the schools administrations. Sociodemographic characteristics of the samples were displayed in Table 1. The mean age of the students participating in the research was 7 (83 months) and 50% of the students were female. The mean age of mothers was 39 and 40% of mothers reported that they did not work outside the home. A total of 32% of mothers had a university degree or higher, 42% were graduates of some college or a vocational program, and 26% had a high school diploma or below. The median annual family income of the participants was established as 6-7.99 million JPY (Japanese yen) or 75.00-100,000 US dollars. While 22% of the respondents had a family income of more than 10 million JPY, 41% had a family income between 6 and 10 million JPY. 37% of the participants had a family income of less than 6 million JPY.

On the other hand, the South Korean participants comprised mothers of 372 students from three public primary schools in the Incheon metropolitan area. Invitation letters were sent to the parents of the first and second grade students to participate in the research through the schools administrations. Almost all of the parents agreed to take part in the research. The mean age of students in the South Korean sample was 7 (93 months) and 52% of the students were female. The mean age of mothers was 38 years. 53% of mothers reported that they did not work outside the home. Only 17% of South Korean mothers had a university degree, 23% were graduates of some college or a vocational program. 60% of the mothers had a high school diploma or below. The majority of families in the South Korean sample reported a median annual income in the 36-50 million salary range, which was considerably less than 50.6 million (Korean Statistical Information Service, 2015c).

Table 1 *Sociodemographic or socioeconomic status information*

	Japanese (n = 309)	**South Korean (n = 372)**
Maternal age (mean)	38.67 (4.01)	38.21 (3.86)
Education	Figure - (Percentage)	Figure - (Percentage)
High School or Equivalent Diploma or below	77 (% 25.7)	223 (% 60.1)
Some college, vocational school or two-year higher education institution	126 (% 42.0)	84 (% 22.6)
University graduate or higher	97 (% 32.3)	64 (% 17.2)
Family Income		
High income	50 (% 22.2)	9 (% 2.7)
Median income	82 (% 40.9)	72 (% 22.0)
Low income	83 (% 36.9)	247 (% 75.3)
Mothers not employed outside the home	123 (% 39.8)	196 (% 52.7)
Students' age (months)	82.97 (.96)	93.14 (7.06)
Students' gender (female)	154 (% 49.8)	193 (% 52.0)

Note: Figures and parentheses refer to means and standard deviations for continuous variables, and figures and percentages for categorical/binary variables, respectively.
High income = over 10 million JPY and over 100 million KRW, **Median income** = 6-9.99 million JPY and 50-100 million KRW, **Low income** = less than 6 million JPY and less than 50 million KRW (Holloway, Campbell, Nagase , Kim, Suzuki, Wang, Iwatate, & Baak, 2016, p.262).

Measures

School-Related Competence of Students: Teachers used the 25-item Social Competence Scale-Teacher Version [Conduct Problems Prevention Research Group (CPPRG), 1990] to assess students' prosocial skills, emotional self-regulation skills and cognitive/academic skills. They coded students' responses on a five-point Likert scale from "Not at all (0)," to "Very well (5)." Teachers assessed students' prosocial skills such as "solving peer problems on own", emotional self-regulation skills such as "calming down when excited or very angry", and cognitive/academic skills such as "staying on task". A composite score was calculated by averaging all scale items (a = .97 Japan: .98 South Korea).

Parental Self-Efficacy in the Processes of Socializing, Educating and Rearing Children

Parents used parenting self-efficacy scale of revised-first version of Berkeley, which included 22 items, to assess their own self-efficacy in their socialization, education and rearing processes. Parents rated their self-efficacy on a 6-point Likert scale ranging from 1 = "not at all confident" to 6 = "completely confident". The scale included items that aimed to assess perceived parental capacity to help children acquire social/emotional skills, cognitive/academic skills, and health-related behaviors. Parents assessed their perceived capacity to help their children acquire both social/emotional skills such as "getting along well with other children" and cognitive/academic skills such as "doing homework regularly and properly", as well as health-related behaviors such as "getting enough sleep". On the other hand,

parents also rated their perceived capacities to engage in general socialization, education and rearing behaviors such as "understanding children's feelings". Scale items from both questionnaires were averaged to generate a combined indicator of parents' self-efficacy in socializing, educating and raising processes (a = .94 Japan; .96 North Korea). A previous version of the scale showed robust validation in a sample of mothers (Suzuki et al,, 2009).

Parents' Interest in Education of Their Children

Parents reported how often they engaged in five types of parental interest regarding regular and supplementary education, such as talking about and discussing school experience, monitoring homework, aiding children study for tests, performing spelling, math or another skills, and reading with children. They rated how often they engaged in the five types of parental interest on a 5-point Likert-type response scale ranging from 1 = "never" to 5 = "daily". A combined point was calculated by averaging all scale items (a = .76 Japan; .80 South Korea)

Maternal Education as a Main Indicator of Socioeconomic Status

Mothers participating in the study reported the highest level of their education they had completed on a six-level scale. This point was then converted into a 3-level variable as low = "high school degree or below", medium = "some college, vocational school or two-year higher institution", and high = "university degree or above".

Family Income as a Main Indicator of Socioeconomic Status

In the present study, family income was firstly evaluated on a 10-level scale. This variable were then converted into three groups as low = "below 6 million JPY", medium = "6-10 million JP"' and high = "above 10 million JPY" for Japanese families, and as low = "below 36 million KRW", medium = "36-50 million KRW" and high = "over 50 million KRW" for South Korean families.

Control Variables in the Study

The control variables in the study were presented in the form of a dual indicator with students' gender as male or female and the mother's work status as employed or unemployed.

Procedure

Questionnaires designed for the purpose of measuring parental self-efficacy and parental interest in socialization, education and rearing processes were sent to the parents, Then, the questionnaires completed by the mothers were submitted back to the school. Thus, teachers assessed students' school-related competence.

Initial Analysis

An ANOVA examining the three-level relationship of the mother's education with students' school-related competence was conducted to identify indicators of maternal education in the research. For the Japanese sample, no differences in terms of school-related competence were found between students from medium-educated families and those from higher-educated families. Average school-related aptitude scores of students from low-educated families varied significantly from those of students from medium- and higher-educated families. On that account, a dual version of maternal education in the form of a high school diploma or below and some college degree or higher was used in the analysis. Family income was not associated with students' school-related aptitude scores divided into two or three parts. In the South Korean sample, however, education of mothers was not significantly linked to students' school-related aptitude scores divided into two or three parts. School-related aptitude scores of students from higher-income families were found to be higher compared to those of students from low- and medium-income families. Subsequent analysis was performed with binary variables 0 = below the national median and 1 = above the national median.

Table 2: *Comparison of parents' self-efficacy, interest of parents, and school-associated ability of students in socialization, education, and rearing processes according to socioeconomic status : The Japanese sample*

	Sample total	Low-income families	Higher-income families	Income inequalities	Low-income families	Higher-income families	Educational inequalities
	M (SD)	M (SD)	M (SD)	t (df)	M (SD)	M (SD)	t (df)
Parental self-efficacy in socialization, education, and rearing processes	3.58 (.64)	3.63 (.66)	3.56 (.67)	.72 (223)	3.56 (.64)	3.59 (.65)	-.30 (298)
Parental interest	4.96 (.71)	5.01 (.79)	4.96 (.69)	.44 (197)	4.91 (.80)	4.98 (.69)	-.65 (255)
School-related competence of students	3.57 (.71)	3.52 (.71)	3.62 (.77)	-.91 (208)	3.38 (.61)	3.64 (.73)	-2.70 (277)

Note: ** $p < .01$. (Holloway, Campbell, Nagase, Kim, Suzuki, Wang, Iwatate, & Baak, 2016, p.265).

Descriptive Analysis

Bivariate analysis demonstrated stronger social class inequalities and disparities here in South Korea as compared to Japan. In the Japanese sample in Table 2, t-tests revealed children of mothers with higher education displayed higher levels of school-related competence. In the South Korean sample in Table 3, education of mothers was related to higher parental involvement. South Korean mothers who reported higher family incomes felt more effective in their self-efficacy during the processes of socializing, educating and rearing their children, were more engaged in parental involvement, and had more talented children with higher levels of school-related competence.

Table 3: *Comparison of self-efficacy of parents, interest of parents, and school-associated with ability of students in socializing, educating and rearing children according to socioeconomic status: The South Korean sample*

	Sample total	Low-income families	Higher-income families	Income inequalities	Low-income families	Higher-income families	Educational inequalities
	M (SD)	M (SD)	M (SD)	t (df)	M (SD)	M (SD)	t (df)
Parental self-efficacy in socialization, education, and rearing processes	3.98 (.81)	3.95 (.83)	4.16 (.75)	-2.02 (326)	3.98 (.80)	4.00 (.87)	-.24 (369)
Parental interest	4.77 (.87)	4.76 (.85)	5.04 (.71)	-2.69 (324)	4.72 (.90)	5.04 (.70)	-.2.66 (367)
School-related competence of students	3.70 (.87)	3.60 (.87)	4.04 (.81)	-4.02 (325)	3.68 (.89)	3.84 (.79)	-1.34 (368)

Note: * p < . 05, ** p < .01, *** p < .001. (Holloway, Campbell, Nagase, Kim, Suzuki, Wang, Iwatate, & Baak, 2016, p.265).

In Table 4, correlations were calculated as control variables between students' gender and mothers' work status, parents' self-efficacy in socializing, training and rearing, parental interest, and school-related competence of students. It was determined that female students had higher school-related competence compared to male students. In the Japanese sample, stay-at-home mothers engaged more in parental involvement and their children had higher points of school-related competence. Mothers who reported higher self-efficacy in socializing, educating, and rearing children displayed higher levels of parental interest, and their children scored higher in school-related skills. Likewise, parents' self-efficacy in socialization, education, and rearing, parental interest, and school-related competence of children were all positively correlated in the Korean sample.

Table 4: *Correlations between main variables ((lower half=Japanese sample, upper half=Korean sample)*

Variables	1	2	3	4	5	6	7
1.Students'gender	-	.06	-.13*	.05	.07	-.01	.38***
2.Mothers' work status	-.03	-	-.15**	-.17**	.02	.08	-.02
3.Highest levels of maternal education	.01	-.01	-	.24***	.05	.20***	.03
4.Family income	-.10	-.09	.44***	-	.16**	.22***	.21***
5.Parental self-efficacy in socialization, education and rearing	.15*	.07	.00	-.01	-	.41***	.16**
6. Parental involvement in home-based education	-.04	.18**	.04	.02	.34***	-	.11*
7. School-related competence of students	.30***	.13*	.17**	.09	.16**	.02	-

* p < .05, ** p < .01, *** p < .001. (Holloway et al., 2016, p.265).

Mediating Effects

In the study, the direct and mediating effects of socioeconomic status on school-related competence of children were tested using the PROCESS macro for SPSS, and a regression-based mediation analysis was performed for each sample separately (Hayes, 2013). The gender of the students and the work status of the mothers were incorporated as covariates. Maternal

education was used as an indicator of socioeconomic status for the Japanese sample and family income for the South Korean sample. The analysis tested whether parental self-efficacy and parental interest during the processes of socializing, educating, and rearing children simultaneously mediated the association between socioeconomic status or social class indicators and school-associated ability of children.

In the Japanese sample, parental self-efficacy and parental interest in socialization, education and rearing processes, together with education of mothers and control variables, were included in the total direct effect model as regressors determining the direction of the trend. The model appeared to be significant with F (5, 303) = 10.56, $p < .001$ explaining 15 % of the variation in children's in school-related competence points. When their mothers had higher education ($b = .25$, $t = 3.96$, $p = .002$), when they notified higher self-efficacy in socializing, educating and rearing children ($b = .14$, $t = 2.18$, $p = .030$), and when they did not work outside the home ($b = .19$, $t = 2.44$, $p = .015$), children obtained higher achievement scores in school-related skills. It was established that the findings were not significant as far as parental involvement was concerned. Girls were evaluated higher in school-related competence ($b = .39$, $t = 5.27$, $p < .001$). At this point, no indirect influence was observed on parental self-efficacy in socialization, education and rearing processes. To put it briefly, although it was seen that parental self-efficacy in socialization, education and rearing processes had a direct effect on children's school-related competence when various sociodemographic characteristics were controlled, it could not be concluded that either parental self-efficacy or parental interest mediated the impact of maternal education on school-related competence.

As for the Korean sample, the overall model was found to be significant with F (5, 366) = 17.45, $p < .001$ explaining 19 % of the variation in children's school-related competence scores (Table 5). Students' higher school-related competence scores were significantly linked to family income ($b = .33$, t = 3.24, p = .001) and students' being a girl ($b = .63$, $t = 7.69$, $p < .001$). The direct influence of parental self-efficacy in socialization, education, and rearing processes emerged as marginally significant ($b = .09$, $t = 1.70$, $p = .090$), whereas parental involvement was not as significant. There was no significant indirect effect of parental involvement on students' school-related competence. Parental self-efficacy had a significant indirect effect on socialization, education and rearing and parental self-efficacy mediated the association between parents' income and school- associated ability of children to a certain degree.

Moderating Effects

In an effort to designate whether parental self-efficacy or parental in-

terest significantly moderated the association between socioeconomic status and school-associated ability of children in socialization, education and rearing processes, researchers regressed children's school-related competence on maternal education, parental self-efficacy, parental interest, the interaction between maternal education and parental self-efficacy, and the interaction of maternal education and parental involvement with two control variables. For the Japanese sample, the model was significant, with F (7, 301) = 8.66, p < .001 explaining 17 % of the variation in children's school-related competence. Children's gender had a significant impact (b = .38, t = 5.16, p < .001), as did mothers' work status (b = .17, t = 2.26, p = .025). The interaction between education of mothers and parental self-efficacy in socialization, education and rearing processes was also found to be significant (b = .34, t = 2.34, p = .020). It was demonstrated that the positive influences of maternal education were improved by higher self-efficacy of parents. For children of lower-educated mothers, maternal self-efficacy did not act as a buffer; on the contrary, higher parental self-efficacy was associated with lower school-related scores for these children.

Table 5 *Mediating effect of family income on school-associated ability of children through self-efficacy and interest of parents: the South Korean sample*

Direct influences		***b***	***t***	***p***
Predictors				
Family income (high)		.33**	3.24	.001
Children's gender (female)		.63***	7.69	< .001
Mothers' work status (not employed outside the home)		- .04	- .50	.619
Parental self-efficacy during socialization, education and rearing processes		.09	1.70	.090
Parental educational involvement		.05	1.05	.293
Indirect influences	**influence**	**SE**	**% 95** CI lower limit	**% 95** CI upper limit
Predictors				
Parental self-efficacy during socialization, education and rearing processes	.023	.017	.003	.075
Parental educational involvement	.022	.022	-.016	.074

Note**:** ***p* < .**05, ** p < .01, *** p < .001. (Holloway et al,, 2016, p.267).

In the South Korean sample, researchers regressed children's school-related competence on family income, parental self-efficacy, parental interest, the interaction between family income and parental interest, and the interaction of family income and parental interest with two control variables. The result was a significant pattern, namely F (7, 364) = 12.47, p < .001, that explained 19 % of the variation in children's school-related competence. Both the interaction between family income and parental self-efficacy, and the interaction between family income and parental involvement did not seem to be significant. Consequently, the South Korean sample did not demonstrate any evidence of moderation.

DISCUSSION

The present research aimed to explore whether parental self-efficacy or parental interest during the processes of socializing, educating and rearing children mediated or directed the association between socioeconomic status and social class of parents and school-associated ability of children. The study underlined the enhancing gap between the egalitarian origines of public education and the expanding opportunities to benefit from the monetary and human capital mobilized for children from families in higher socioeconomic status. The research focused on primary school years, relatively under-researched compared to middle school and especially high school, and investigated the role of parental educational interest at home and of self-efficacy of parents in socialization, education and rearing processes (Holloway, 2010). The research also focused on the mediating and managing role of parents' socialization, education and rearing practices and addressed the discussions that associated socioeconomic status as a social structure with students' learning and academic success. It tried to investigate and clarify family-level processes that could provide opportunities for children to learn and succeed at school (Lareau, 2003).

The research provided three major findings. First, socioeconomic status or social class was found to be associated with school-related competence of students, indicating that the relationship pattern displayed differences across the two samples. While education of mothers was significantly associated with school-related competence of children as a main indicator of socioeconomic status in the Japanese sample, family income more strongly predicted school-associated ability of children as a main indicator of socioeconomic status in the South Korean sample. These findings were compatible and consistent with previous research (Sirin, 2005), showing that the relationships between components of social class or socioeconomic status and students' learning consequences might vary depending on the cultural or national features.

The second finding uncovered in the study demonstrated that self-efficacy of parents in socializing, educating and rearing practices to some extent mediated the association between family income and school-related ability of students in the South Korean sample. Given the strong oppression to participate their children in complementary education programs, South Korean parents with fewer monetary resources might start to question their competence to supply these social expectations; as a result, their self-efficacy was likely to be undermined. Family income also appeared to be linked to parental educational involvement, and only bivariate relationships were significant. In view of the fact that more than 80 % of children attended complementary schools, parents' own interest was likely to be less important than if learning of all children was restricted to the orderly pub-

lic school day. Parents paid a certain amount of money for supplementary learning programs to act as a surrogate in engaging in the role of teaching and motivating children. Nonetheless, it was important to carry out further studies in this area with culturally-particular measures of parental interest. Here, in addition to participating children in complementary courses and classes associated with students' academic achievement outcomes, parents could have class-based socializing, educating and rearing activities.

The third finding obtained in the study demonstrated that self-efficacy of parents mediated the association between education of mothers and school-related ability of children in socialization and education practices in the Japanese sample. More highly educated mothers were able to offer their children expanded advantages. In the case of less educated mothers, high self-efficacy was negatively related to school-associated ability of children. This rather unanticipated finding deserves to be addressed and explored in future research. In Japan, assertive mothers were often dubbed "monster parents" and were sharply criticized by the media and academic scholars (Morotomi, 2008). Less educated women and their children were especially labeled for speaking loudly and confidently in interactions with the school staff. Although the fact that parental interest was not related to school- associated ability of children emerged as a surprising result, it was less able to adapt to the wide-ranging consequences of the parental involvement activities that were assessed. The relationship could probably be stronger when an consequence measure that more explicitly focused on cognitive skills and educational success, although this was not typically the way of children who were assessed at this young age.

A few limitations of the study should also be cited at this point. First, it was expressed that it would not be appropriate to make a broad nationwide generalization of the findings obtained from the described sample, as was the case in some specific research that required sample compatibility. Compared to the population described, the Japanese sample was relatively wealthier and more highly educated, while the South Korean sample had relatively lower family income and education level. Moreover, it was pointed out that causal inferences did not allow dependence on the analysis of cross-sectional data. Finally, as expressed earlier, there might be other country-particular forms of parental educational interest at home that significantly predicted students' school-related competence. As the findings of the current research were clear, it became necessary to investigate the role of parental interest in the social context, as their meaning and impact depended on the socio-cultural and institutional conditions in which parents were took part.

The present study paved the way for future research and policy attempts. Firstly, the findings demonstrated that parental educational interest

was often associated with school-related competence of their children, and stressed the importance of parental self-efficacy in the processes of socializing, educating and rearing children in order to increase and enhance types of parental involvement. It was also emphasized that school clerks could not necessarily answer positively to influential parents who challenged the authority of the school. Parents or their children from lower socioeconomic status backgrounds were particularly likely to experience negative reactions and repercussions since they could disrupt the traditional role hierarchy. Secondly, although many previous studies discovered an relationship between parental educational interest and school-related ability of children, the findings of the present research were modest in this regard. It was asserted that specific actions encouraged by parents were not necessarily a powerful way of handling socioeconomic status and social class differences in students' academic performance. In addition, it was emphasized that the social and personal cost of the increasing phenomenon of intensive parental socialization, education and rearing should be taken into consideration particularly for women (Hays, 1998). Women's chances of employment and engagement in meaningful and paid jobs were severely reduced by structural barriers to their achievement in the workplace (Nemoto, 2016). Women who quit full-time jobs during the years of child socialization, education and rearing owing to powerful desires from the school system were deprived of their economic freedom and the potential cognitive and intellectual engaging related to labor power participating. Future research should be able to focus more on studies that will serve the significant purpose of fostering effective parental interest without returning into a full-time job.

References

Bandura, A. (1982). Self-efficacy mechanism in human agency. American *Psychologist, 37*, 122-147.

Bandura, A. (2002). Social cognitive theory in cultural context. *Applied Psychology, 51*, 269-290.

Baquedano-López, P., Alexander, R. A., & Hernandez, S. J. (2013). Equity issues in parental and community involvement in schools: What teacher educators need to know. *Review of Research in Education, 37*(1), 149-182.

Bempechat, J., & Shernoff, D. J. (2012). Parental influences on achievement motivation and student achievement. In S. L. Christensen, A. L. Reschly, & C. E. Wylie (Eds.), *Handbook of research on student engagement* (pp. 315-342). New York: Springer.

Bierman, K. L., & Boivin, M. (2014). School readiness in a developmental perspective: Summary of findings and implications for future research and practice. In M. Boivin & K. L. Bierman (Eds.), *Promoting school readiness and early learning: Implications of developmental research for practice* (pp. 362-382). New York, NY: Guilford Press.

Byun, S.-Y., & Kim, K.-K. (2010). Educational inequality in South Korea: The widening socioeconomic gap in student achievement. *Research in Sociology of Education, 17*, 155-182.

Calabrese Barton, A., Drake, C., Perez, J. G., St. Louis, K., & George, M. (2004). Ecologies of parental engagement in urban elementary schools. *Educational Researcher, 33*, 3-12.

Christenson, S. L., & Sheridan, S. (2001). *School and families: Creating essential connections for learning*. New York, NY: Guilford Press.

Conduct Problems Prevention Research Group. (1990). *The social competence scale – Teacher version*. Retrieved from http://www.fasttrackproject.org/techrept/s/sct/

Crosnoe, R. (2006). *Mexican roots, American schools: Helping Mexican immigrant children succeed*. Stanford, CA: Stanford University Press

Dearing, E., Kreider, H., Simpkins, S., & Weiss, H. B. (2006). Family involvement in school and low-income children's literacy: Longitudinal associations between and within families. *Journal of Educational Psychology, 98*, 653-664.

Floyd, F. J., Gilliom, L. A., & Costigan, C. L. (1998). Marriage and the parenting alliance: Longitudinal prediction of change in parenting perceptions and behaviors. *Child Development, 69*, 1461-1479.

Hayes, A. (2013). *Introduction to mediation, moderation, and conditional process analysis*. New York, NY: Guilford.

Holloway, S. D., & Yamamoto, Y. (2003). Sensei: Early childhood education teachers in Japan. In O. Saracho & B. Spodek (Eds.), *Studying teachers in early*

childhood education settings (pp. 181-207). Greenwich, CT: Information Age Publishing.

Holloway, S. D. (2010). *Women and family in contemporary Japan*. Cambridge, England: Cambridge University Press.

Holloway, S. D., Campbell, E. J., Nagase, N., Kim, S., Suzuki, S., Wang, Q., Iwatate, K. & Baak, S. Y. (2016). Parenting Self-Efficacy and Parental Involvement: Mediators or Moderators Between Socioeconomic Status and Children's Academic Competence in Japan and Korea? *Research in Human Development, 13*(3), 258-272.

Holloway, S. D., & Jonas, M. (2016). Families, culture, and schooling: A critical review of theory and research. In K. R. Wentzel & G. B. Ramani (Eds.), *Handbook of social influences on social-emotional motivation, and cognitive outcomes in school contexts* (pp. 258-272). New York, NY: Taylor & Francis.

Hoover-Dempsey, K. V., Walker, J. M. T., Sandler, H. M., Whetsel, D., Green, C. L., Wilkins, A. S., & Closson, K. (2005). Why do parents become involved? Research findings and implications. *The Elementary School Journal, 106*, 105-130.

Jeynes, W. H. (2005). Parental involvement and student achievement: A meta-analysis. Retrieved from http://www.hfrp. org/publications-resources/browse-our-publications/parental-involvement-and-student-achievement-a-meta-analysis.

Jones, T. L., & Prinz, R. J. (2005). Potential roles of parental self-efficacy in parent and child adjustment: *A review. Clinical Psychology Review, 25*, 341-363.

Kariya, T., Shimizu, K., Shimizu, M., & Morota, Y. (2002*). Chosa hokoku: Gakuryoku teika no jittai* [A report of lowering academic performance]. Tokyo, Japan: Iwanami Shoten.

Kariya, T. (2012). *Education reform and social class in Japan: The emerging incentive divide*. New York, NY: Routledge.

Korean Statistical Information Service. (2015a). *Participation rate on private education by school level and characteristics.* Retrieved from http://kosis.kr/eng/statisticsList/statisticsList_01List.jsp?vwcd=MT_ETITLE&parentId=O#SubCon

Korean Statistical Information Service. (2015c). *Household income and expenditure survey*. Retrieved from http://kosis. kr/eng/statisticsList/statisticsList_01List.jsp?vwcd=MT_ETITLE&parentId=C#SubCont

Lareau, A. (2003). *Unequal childhoods: Class, race, and family life*. Berkeley, CA: University of California Press.

Lee, J.-K. (2006). Educational fever and South Korean higher education. *Revista Electronica de Investigacion Educativa (REDIE), 8*, 1-14.

Lewis, C., Perry, R., & Murata, A. (2006). How should research contribute to in-

structional improvement? *The case of lesson study. Educational Researcher, 35*, 3-14.

Matsuoka, R. (2015). School socioeconomic compositional effect on shadow education participation: Evidence from Japan. *British Journal of Sociology of Education, 36*, 270-290.

McWayne, C. M. (2015). Family-school partnerships in a context of urgent engagement: Rethinking models, measurement, and meaningfulness. In S. M. Sheridan & E. M. Kim (Eds), *Foundational aspects of family-school partnership research* (pp. 103-122). New York, NY: Springer.

Morotomi, H. (2008). *Monster parents: Oyabaka to bakaoya wa kamihitoe [Monster parents: The difference between obsessive and stupid parents is paper thin]*. Tokyo, Japan: Tankobon.

Nemoto, K. (2016). *Too few women at the top: The persistence of inequality in Japan*. Ithaca, NY and London, England: Cornell University Press.

Oettingen, G., & Zosuls, K. (2006). Culture and self-efficacy in adolescents. In F. Pajares & T. Urdan (Eds.), *Self-efficacy and adolescents* (pp. 245-267). Greenwich, CT: Information Age Publishing.

Organization for Economic Co-operation & Development. (2014a). Lessons from PISA for Korea. Paris: OECD Publishing.

Organization for Economic Co-operation & Development. (2014b). Lessons from PISA for Japan. Paris: OECD Publishing

Organization for Economic Co-operation & Development. (2014c). PISA 2012 results: Excellence through equity: Vol 2. Giving every student the chance to succeed. Paris: OECD Publishing.

Park, Y. S., & Kim, U. (2006). Family, parent-child relationship, and academic achievement in Korea. In U. Kim, K.-S. Yang, & K.-K. Hwang (Eds.), *Indigenous and cultural psychology: Understanding people in context* (pp. 421-443). New York, NY: Springer.

Park, H., Byun, S.-Y., & Kim, K.-K. (2011). Parental involvement and students' cognitive outcomes in Korea: Focusing on private tutoring. *Sociology of Education*, 84, 3-22.

Park, S., & Holloway, S. D. (2013). No parent left behind: Predicting parental involvement in adolescents' education within a sociodemographically diverse population. *The Journal of Educational Research, 106*(2), 105-119.

Pomerantz, E. M., Moorman, E. A., & Litwack, S. D. (2007). The how, whom, and why of parents' involvement in children's academic lives: More is not always better. *Review of Educational Research, 77*, 373-410.

Shin, K., & Lee, B. (2010). Social class and educational inequality in South Korea. In P. Attewell & K. S. Newman (Eds.), *Growing gaps: Educational inequality around the world* (pp. 105-123). New York, NY: Oxford University Press.

Smith, J. G. (2006). Parental involvement in education among low-income families: A case study. *The School Community Journal, 16*(1), 43-56.

Sonnenschein, S., & Thompson, J. A. (2012). Socialization and education. In J. A. Banks (Ed.), *Encyclopedia of education* (pp. 2017-2020). Thousand Oaks, CA: Sage.

Suzuki, S., Holloway, S. D., Yamamoto, Y., & Mindnich, J. D. (2009). Parenting self-efficacy and social support in Japan and the United States. *Journal of Family Issues, 30*, 1505-1526.

Suzuki, S., Holloway, S. D., & Yamamoto, Y. (2016). *Technical report on the Berkeley Parenting Self-Efficacy Scale-Revised* (Unpublished manuscript). Kalmanovitz School of Education, Saint Mary's College of California, Moraga, CA.

Sirin, S. (2005). Socioeconomic status and academic achievement: A meta-analytic review of research. *Review of Educational Research, 75*, 417-453.

U.S. Department of Education (2004). No Child Left Behind: Parental involvement: Title 1, Part A. Retrieved from http:/ /www2.ed.gov/programs/titleiparta/parentinvguid.pdf

Yamamoto, Y., Holloway, S. D., & Suzuki, S. (2006). Maternal involvement in preschool children's education in Japan: Relation to parenting beliefs and socioeconomic status. *Early Childhood Research Quarterly, 21*, 332-346.

Yamamoto, Y., & Brinton, M. C. (2010). Cultural capital in East Asian educational systems: The case of Japan. *Sociology of Education, 83*, 67-83.

Yamamoto, Y. (2015). Social class and Japanese mothers' support of young children's education: A qualitative study. *Journal of Early Childhood Research, 13*, 165-180.

Yoon, J., & Cho, H. (2011). Structural modeling of parenting behavior of mothers with preschool children. *Journal of Korean Academy of Child Health Nursing, 17*, 111-119.

CHAPTER 4

INVESTIGATING THE MEDIATING ROLE OF MOTIVATION IN THE RELATIONSHIP BETWEEN STUDENT SELF-REGULATION AND SATISFACTION IN DISTANCE EDUCATION

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1. Introduction

The advent of information technology has significantly impacted the creation of educational content and access to education settings. Distance education programmes and online learning settings have disrupted traditional educational settings by offering students greater flexibility, accessibility, and convenience in the last decade. Moreover, the global pandemic has accelerated the widespread adoption of distance education across all levels of education, making it a dominant approach to delivering educational content.

The adequacy and effectiveness of distance education and traditional face-to-face education in higher education programmes have been extensively studied and discussed (Allen et al., 2002; Kazu & Yalçin, 2022; Simonson et al., 2011; Yick & Costin, 2005). Recent advances in information technologies and the widespread use of mobile devices have improved the learning environment of distance education, providing students with more excellent opportunities to achieve programme competencies compared to earlier iterations. Many factors impact students' ability to achieve program outcomes in both traditional and distance education environments. These factors include individual student characteristics, such as self-efficacy, self-regulation (Do & Lai, 2023), satisfaction, and motivation (Goulimaris, 2015), as well as institutional factors, such as faculty members (Rashid & Rashid, 2012), information infrastructure and applications (Angolia & Pagliari, 2016; Rahman, 2014), and online course content (Moore, 2013; Rovai & Downey, 2010). As distance education continues to expand globally, it has become increasingly important to identify the key factors contributing to student satisfaction in this unique learning environment. Among the numerous factors explored in educational research, self-regulated learning (SRL) and student motivation (SM) have received considerable attention because of their significant impacts on student outcomes.

Many academic studies have emphasized the importance of motivation (Chen & Jang, 2010; Deimann & Bastians, 2010; Hart, 2012; Simons et al., 2020) and the effects of student satisfaction (Chan et al., 2020; Cole et al., 2014; El-aasar & Farghali, 2022) in distance education programmes.

Asynchronous learning, a common characteristic of distance education, necessitates students exhibit self-initiative and self-direction, underscoring the critical importance of student self-regulation (SSR). As the Zimmerman social-cognitive model proposes, SRL empowers learners to set challenging goals, monitor their progress, and employ adaptive strategies to achieve academic success (Zimmerman, 2001). Given the increased responsibility that students must assume in the context of distance education, student self-regulation has become even more crucial. Similarly,

motivation is pivotal in determining student persistence and engagement in the distance learning process (Steinmayr, 2019). With reduced face-to-face interactions and increased feelings of isolation, nurturing and maintaining motivation have become paramount. Intrinsic motivation, driven by a genuine interest in and enjoyment of learning materials, has been associated with improved academic performance and higher satisfaction levels, whereas extrinsic motivation, based on external incentives or pressures, may not foster lasting contentment (Ryan & Deci, 2020). Moreover, motivation is crucial in determining students' engagement and diligence in online learning experiences.

Student satisfaction (SS), student motivation (SM), and student self-regulation (SSR) are complex and intricately related factors. A growing body of research has examined the complex interactions between SS, motivation SM, and SSR using diverse research methodologies in educational contexts. Some studies have explored the individual effects of SS, SM, and SSR in traditional education (Margrain, 1978; Shulruf et al., 2008). However, there still exist gaps in knowledge regarding how these factors specifically manifest in distance education environments. Therefore, the primary objective of the current study was to provide a comprehensive examination of the intricate connections among SS, SM, and SSR in distance education. This study aimed to enhance theoretical understanding and offer practical implications for distance education environments by building upon prior research and utilizing a comprehensive approach. Specifically, this research examined and tested motivation as a mediator in the association between self-regulation and satisfaction.

The findings are intended to inform educators, instructional designers, and institutions on optimizing distance learning experiences and effectively supporting online students. This research contributes valuable knowledge to ongoing academic discussions and efforts to improve distance education pedagogy and practice.

2. Literature Review

2.1. Student Self-Regulation and Student Motivation

Student self-regulation is a process that empowers learners to take responsibility for their learning outcomes in education. It is not a passive reaction to teaching but an ongoing activity that learners will continue to perform in the future. SSR is a transformative process in which learners' mental skills evolve into academic achievement (Zimmerman, 2002).

SSR is defined differently based on different psychological theories. The competency includes basic mental, behavioural, and motivational features and self-control and emotion regulation processes. Pintrich (2000)

defines SSR as learning resulting from students' thoughts and behaviours that they systematically create toward learning goals. SSR is the ability to control and manage one's thoughts, emotions, and actions to achieve specific goals or maintain focus and discipline in various situations.

SSR is a multi-component, iterative, self-directed process that targets cognition, emotions, actions, and environmental characteristics for one's own purposes (Cascallar et al., 2006). The consensus within academic discussions is that SSR involves three dimensions: cognition, emotion, and behaviour, which typically exhibit interconnections and mutual influence (Ainley & Patrick, 2006).

Learners who possess practical SSR skills are highly regarded by researchers and educators in traditional learning environments (Boekaerts, 1999). These individuals demonstrate a higher level of responsibility for their own learning outcomes through active participation in metacognitive, motivational, and behavioural learning processes (Zimmerman, 1989, 1990).

Self-regulated learning (SRL) refers to purposeful, academically effective learning forms that involve metacognition, intrinsic motivation, and strategic action (Zimmerman, 1989). Zimmerman (1989) further described SRL as emphasizing the dynamic interplay between self-regulation processes, environmental factors, and behavioural events. Zimmerman's influential model (2000) proposes that SRL consists of three iterative phases–forethought, performance, and self-reflection which operate sequentially and continuously to guide learners' pursuit of academic goals. Specifically, the forethought phase involves task analysis and goal setting; performance involves deploying strategies monitored by self-observation; and self-reflection involves self-evaluation and attributions. These phases function cyclically, with learners taking increasing responsibility for their learning outcomes through engaged metacognitive, motivational, and behavioural processes (Zimmerman, 1989, 1990). SRL fosters learning, enhances perceived competence, and sustains motivation to achieve new goals (Schunk & Ertmer, 2000). In summary, Zimmerman's model conceptualizes SRL as a strategic, self-directed process in which learners methodically plan, implement, and reflect on their studies in a recurring cycle. The cyclical nature of forethought, performance, and self-reflection facilitates the augmentation of autonomy, capabilities, and motivation among self-regulated learners.

SRL is of particular significance for students engaged in distance education, where the absence of a direct instructor presence necessitates more excellent self-organization of learning activities (Hung et al., 2010; Kebritchi et al., 2017; Kizilcec et al., 2017; Wang et al., 2013). SSR has emerged

as an essential factor for student success in distance education environments. It involves students intentionally utilizing cognitive, metacognitive, resource management, and motivational strategies to pursue their academic goals effectively (Barnard et al., 2009). By employing these strategies, distance education students can take ownership of their learning processes and optimize their educational outcomes.

Distance and online learning students encounter specific challenges in establishing and adhering to study schedules, focusing on their coursework, and sustaining attention and concentration (Maria, 2021). In distance education university studies, mastery of SRL strategies becomes crucial because of the significantly increased workload and heightened need for students to be independent and accountable for their learning. Sauvé et al. (2019) conducted a study that revealed the presence of challenges among students enrolled in distance education programmes related to their SRL skills. Highly self-regulated students demonstrate compelling positive motivation in their learning process, content selection, organization, and learning control, as well as identifying relevant learning objectives in distance education environments (Albelbisi & Yasop, 2019). Choudhary et al. (2020) conducted a comparative study focusing on science and arts students to assess the SRL capabilities of distance learners. Their findings underscore the importance of SRL strategies in facilitating the attainment of higher academic objectives in the context of distance learning. While various factors influence the distance learning experience, such as learning habits, preparedness, intelligence, thinking skills, and motivation, SRL plays a significant role in mediating academic stress and fostering academic achievement.

SM and SSR are closely related, influencing each other (Pintrich, 2003). Individuals motivated to achieve a goal engage in self-regulatory activities that they believe will facilitate goal attainment. The connection between SM and SSR is evident in various theoretical models (Pintrich, 2000; Vollmeyer & Rheinberg, 2006; Zimmerman, 2000; Zimmerman & Schunk, 2004). Pintrich model places significant emphasis on motivation, as it underlies goal setting and pursuit and is a focal point of SRL as individuals engage in tasks. Zimmerman's model incorporates motivation throughout three stages: forethought (e.g., self-efficacy, outcome expectations, interest, value, goal orientations), performance control (e.g., attentional focus, self-monitoring), and self-reflection (e.g., self-evaluation of goal progress, causal attributions) (Zimmerman, 2002).

Highly motivated and determined students are more likely to adopt a proactive, constructive, and persistent approach to learning (Zhu et al., 2020). Motivation influences the level of effort and persistence that learners invest in learning. Understanding the interplay between motivation and

self-regulated learning is crucial for promoting effective learning in distance education. Hood et al. (2015) demonstrated a relationship between SSR, motivation, and work experience.

Multiple academic studies have explored SSR and motivation strategies in distance education programmes, emphasizing the significance of SSR and investigating strategies to foster it among learners. Sun and Rueda (2011) examined the impact of situational interest, computer self-efficacy, and SSR on student engagement in distance education. Their findings revealed that SSR encompasses cognitive, motivational, and metacognitive dimensions and is crucial to academic achievement. SSR becomes particularly important in distance learning because students may lack direct instructor encouragement. Another study by Ambreen et al. (2016) evaluated the effectiveness of distance education in fostering self-regulated learning among higher-level learners.

Researchers in these studies examined strategies employed to promote SSR and gathered students' perceptions regarding the efficacy of these strategies, providing valuable insights into cultivating self-regulated learning in distance education programmes.

Meniailo et al. (2021) explored innovative training methods for teachers in higher education institutions in the context of distance learning. Their study highlights the importance of incorporating SSR and motivational strategies in training future teachers. Distance learning platforms offer opportunities for prospective educators to implement innovative training methods that enhance self-regulated skills and motivation.

SSR assumes particular importance in distance education programmes characterized by high learner independence and limited teacher involvement (Lehmann, Hahn, & Ifenthaler, 2014). Supporting SSR strategies can enhance student learning and overall success. SSR is a prominent feature that contributes to the effective implementation of online learning environments, including distance education programmes (Rakes & Dunn, 2010; Sun et al., 2008; You & Kang, 2014).

2.2. Student Motivation and Student Satisfaction

Motivation is essential in enhancing the success of teaching and learning processes (Schunk, 1995). The level of SM in education significantly impacts various aspects of the learning process, including the learners' engagement, persistence, and overall academic achievement. Dörnyei and Ottó (1998) define motivation as an individual's dynamic and evolving state of emotions. It initiates, directs, coordinates, amplifies, terminates, and evaluates the cognitive and physical processes of pursuing and realizing personal goals and aspirations. It encompasses selecting, prioritizing,

implementing, and evaluating actions to fulfil one's desires and intentions, which can vary in success or failure.

As generally defined by Borophy (1983), SM is students' desire and willingness to engage in academic activities and seek knowledge or skills. It is characterized by goal-directed behaviour and persistence, as motivated students persistently work to achieve their goals (Eden, 2022). Motivation is a complex psychological construct encompassing various aspects of human behaviour that influence individuals' choices, goal pursuit, and the level of effort expended in particular endeavours (Dörnyei & Ushioda, 2021). It is crucial in driving meaningful and impactful learning experiences and positively correlates with educational outcomes, such as academic well-being, persistence, and achievement (Ryan & Deci, 2020). Various interconnected cognitive and affective factors influence motivation.

Self-determination theory distinguishes between intrinsic motivation, which arises from internal satisfaction, and extrinsic motivation, which stems from external pressures or rewards (Deci & Ryan, 1985). According to this theory, both types of motivation shape individuals' identities and behaviours (Deci & Ryan, 2008). Intrinsic motivation is driven by an activity's inherent enjoyment or challenge, whereas extrinsic motivation is instrumental and driven by the belief that the activity leads to a separate outcome (Deci et al., 1991).

The self-determination view emphasizes the internalization of social values and norms. An intrinsically motivated individual participates in an activity for its inherent pleasure or challenge without external prods or rewards. For example, a child reading a book for joy demonstrates intrinsic motivation. In contrast, extrinsically motivated behaviours are performed for instrumental reasons, not from personal interest but because they are believed to lead to a separate consequence (Deci et al., 1991).

In summary, extrinsic motivation refers to engagement in an activity due to its inherent engagement or delight, whereas intrinsic motivation refers to engagement in an activity because it leads to a distinctive outcome (Ryan & Deci, 2000).

In addition to the above-mentioned factors, several other constructs significantly impact motivational states. These include self-efficacy, which refers to individual's belief in their capability to achieve goals (Bandura, 1977); academic self-concept, which relates to one's perception of their competencies in academic domains (Marsh & Shavelson, 1985); and domain-specific confidence and global self-esteem (Bong & Skaalvik, 2003). When learners feel autonomously motivated, competent in their abilities, and hold positive academic identities, they demonstrate enhanced persistence, engagement, and performance (Wigfield et al., 2015). Therefore,

fostering the development of interconnected psychological factors is crucial for promoting motivated and successful learning.

Chen and Jang (2010) adapted the motivation scale developed by Vallerand et al. (1993) within the framework of the self-determination theory, recognizing the importance of motivation in online learning environments. They emphasized the relevance of motivation for online learning.

The relationship between SM and SS in distance education is intricately intertwined. Numerous studies have consistently demonstrated a positive correlation between SM and SS, particularly for students enrolled in online courses. Motivation has emerged as a critical determinant of students' experiences and satisfaction with distance education (Dimitrios, 2015). Various studies have underscored its pivotal role, with some emphasizing it as a fundamental factor (Burbuagh et al., 2014) and a prominent predictor of SS in online learning environments (Kirmizi, 2015). Empirical evidence from Cakir et al. (2018) reveals a compelling association between motivation levels and satisfaction outcomes. Highly motivated students consistently exhibited elevated satisfaction levels, while those with lower motivation reported diminished satisfaction. Similarly, Magisan and Prestousa (2023) documented a moderately high level of motivation and a moderate level of student satisfaction, with a robust and positive relationship between motivation and satisfaction. Pinanos et al. (2022) found that satisfaction and motivation were moderately correlated in online learning, highlighting the interdependence between satisfaction levels and learners' intrinsic motivation to participate in learning actively.

Psychological factors influence motivational states, including self-efficacy, academic self-concept, and confidence. Motivation plays a crucial role in online learning environments, with a strong positive correlation between motivation and satisfaction. Highly motivated students tend to experience higher satisfaction levels, highlighting the importance of fostering motivation for successful online learning experiences.

2.3. Student Self-Regulation and Student Satisfaction

SS is a short-term attitude from evaluating a student's educational experience. It is achieved when the performance meets or exceeds the student's expectations (Elliott & Healy, 2001). In the context of this research, SS refers to students' attitudes resulting from an assessment of their educational experience, specifically related to services and facilities provided by the distance institution, such as course programmes, materials, interaction, and support.

SS is essential in higher education as it can impact various aspects of the student experience, including engagement, motivation, learning, per-

formance, success, and ultimately, retention and graduation rates (Martin & Bolliger, 2022). The Sloan Consortium (Moore, 2005) recognizes SS as one of the five pillars in the quality framework of distance education.

SS is a multifaceted construct influenced by various factors in online learning environments. The literature identifies factors such as autonomy, self-efficacy on the Internet, course design, instructional materials, instructor behaviours, interaction levels, platform interface, support services, usefulness, social and technical abilities or preparedness, and student factors as influential in shaping SS (Martin & Bolliger, 2022).

The effectiveness of distance education programs heavily relies on SS. Satisfied students are more likely to persist in learning and achieve educational goals (Keržič, 2021). Moreover, studies have demonstrated a positive correlation between SS, engagement, and academic performance in online courses, underscoring the significance of fulfilment with learning experiences in promoting positive learning outcomes and fostering a stronger connection between satisfaction, increased engagement, and improved academic performance in distance education (Rajabalee & Santally, 2021). Therefore, understanding the characteristics influencing SS in distance education is imperative for promoting effective learning in distance education programs.

The relationship between SRL and SS in online learning has been the subject of several studies with varying findings. Some studies suggest that SRL impacts SS (Kuo et al., 2014), while others emphasize the significance of SRL as a significant factor influencing SS (Inan et al., 2017; Turan et al., 2022). However, although SRL and SS have a positive correlation (Dinh et al., 2022), SRL alone may not be a significant predictor of SS (Wu et al., 2023). Research conducted in online learning environments has consistently demonstrated a positive correlation between SRL and SS (Inan et al., 2017; Nicol, 2009; Puzziferro, 2008; Wang et al., 2013). For example, a study conducted by Dissanayake et al. (2021) with undergraduate students in tourism and hospitality management programs at Sri Lankan state universities found that internet self-efficacy and self-regulated learning levels were above average.

Understanding and fostering self-regulated learning in online learning environments can enhance SS and promote compelling learning experiences in distance education programs.

2.4. Mediating Role of Student Motivation between Student Self-Regulation and Satisfaction

The relationship among SSR, SM, and SS in online education has been extensively examined. Early research provided initial evidence that

SM and SSR are positively linked to student achievement and SM in online courses (Artino, 2009; Artino & McCoach, 2008; Paechter et al., 2010; Puzziferro, 2008; Yukselturk & Bulut, 2007).

A recent study by Hamdan et al. (2021) found that SSR significantly predicts SS. However, contrary to other studies, Landrum (2020) noted that SSR skills do not always significantly predict SM in online courses. Additional research has identified potential mediating factors. For example, Costa et al. (2020) observed that academic experience mediates the impact of SSR on satisfaction. Likewise, Wang et al. (2013) reported self-efficacy as a mediator. More recently, Zixian et al. (2022) explored how motivation and online SSR affect SM. Their findings indicated that these attributes positively influence satisfaction levels, and motivation indirectly impacts satisfaction through elements of a learning community. Collectively, research primarily links SSR to SS in online education, although contextual influences were detected by Landrum (2020). Mediating factors that clarify the SSR to SS relationship include academic experience, self-efficacy, and community aspects. While further investigation is still needed, motivation also appears integral. A more nuanced understanding of these constructs and interactions can optimize online programme designs to enrich learner experiences and outcomes.

Based on research evidence that SSR positively affects SM, and SM positively impacts SS, hypothesizing SM mediates the relationship between SSR and SS is reasonable. As such, interventions targeting motivation could boost SS. These insights may guide instructional strategies and support that foster SSR and motivation to improve SS. Therefore, the author aims to confirm the relationship between SSR and SS and assess motivation mediating influence between the two constructs.

3. Research Design

3.1. Research Method

Mediation analysis is a statistical method used to identify how an independent variable (X) transmits its effect on a dependent variable (Y) through an intervening variable (M) (Hayes, 2013). With fundamental mediation analysis (Model 4), there are two distinct pathways in which a specific X variable is proposed as influencing the Y variable. The pathway that leads from X to Y without passing through M is referred to as the direct effect of X on Y. The pathway from X to Y through M is referred to as the indirect effect of X on Y through M. The indirect effect represents how the path first passes from the antecedent variable X to the consequent variable M and then from the antecedent variable M to the consequent variable Y.

In summary, the indirect effect represents how X influences Y through a causal sequence in which X influences M and then influences Y (Hayes, 2013). The mediation models were tested using the framework of the study. The researcher explored motivation as a mediator by using the PROCESS Procedure for SPSS (Hayes, 2013). Student SSR was identified as the independent variable (X), SM as the mediator (M), and SS as the dependent variable (Y).

Informed consent forms were provided to the participants, along with the main questionnaires. Participants were briefed about the research, and the questionnaires were handed to them. They were also informed that they could withdraw without penalty if they did not want to continue the survey. In addition, participants were explicitly informed of their right to withdraw from the survey at any point without incurring any adverse consequences.

The data were analyzed using SPSS 24 and motivation was explored as a mediating or moderating factor using the PROCESS procedure for SPSS (Hayes, 2013).

This study was approved by the Istanbul University-Cerrahpasa Ethical Committee (2020-146).

3.2. Data Collection Instruments

Data collection was conducted in two sections. The first section included demographic variables, students' gender, and age, and the second section included the items of the "Online Self-Regulated Learning Questionnaire (OSLQ), Online Learning Motivation Scale (OLMS), and Distance Education Students Satisfaction Scale (DESSS). The Online Self-Regulated Learning Questionnaire (OSLQ) was developed by Lan, Bremer, Stevens, and Mullen (2004) with 86 Likert-type 5-point items to measure students' SSR in online learning environments. The short form of the OSLQ has also been validated and found reliable (Barnard et al., 2008). The OSLQ was adapted to Turkish by Kilis and Yıldırım (2018). The Turkish OSLQ is valid, with acceptable fit values. Regarding reliability, Cronbach's alpha values indicating internal consistency varied between .67 and .87 for the sub-factors and .95 for the entire instrument, which yields high reliability. Data on students' online learning motivation levels were collected using the Online Learning Motivation Scale (OLMS) developed by Chen and Jang (2010). Cronbach's alpha values for the subdimensions of academic motivation with eigenvalues greater than 1 (eigenvalue >1) vary between .60 and .94. The Cronbach's alpha value of the scale was .94. Its cognitive reliability was .96. The subdimensions of the scale are intrinsic motivation to know (IMTK), intrinsic motivation to succeed (IMTS), intrinsic motivation to experience stimulation (IMTES), determined regulation (DR), introjected regulation (IR), extrinsic regulation (ER), and a lack of motiva-

tion (LOM). The scale is a 7-point Likert scale and items 5th, 12th, 19th, and 26th are reverse-coded, as in the original scale. The lowest score that can be acquired from the scale is 28, and the highest score is 196. OLMS was adapted for Turkish by Özbaşı et al. (2018). The factor analysis findings calculated the RMSEA value as .08 and chi-square/sd = 5.64. Other fit index values obtained were between .82 and .91. The internal consistency coefficients calculated for each subdimension of the scale adapted into Turkish were between .41 and .84. The Distance Education Student Satisfaction Scale (DESSS) was developed by Volkan Kukul (2011). It consists of 42 items rated on a seven-point Likert-type scale. It has three subdimensions: structure and functioning of the programme, interaction, and common problem areas. The inner consistency coefficient calculated using Cronbach's alpha for the whole scale was .70, and those for the subscales were .93, .96, and .86, respectively. In the structure and functioning of the programme sub-dimension of the scale, SS was measured according to the aims and objectives of the programme, the execution of the teaching process, considering the individual differences of the students, flexibility in follow-up, and the content being prepared in a way that facilitates learning, measurement, and evaluation processes.

In the interaction sub-dimension of the DESSS, SS was measured according to interaction with the instructor in live courses, interaction of students in live courses, management of live courses, and support services in live courses. The common problem areas sub-dimension of the scale measures SS according to the services offered by the programme, access and support services to the institution offering the programme, and communication problems between faculty members and students in the distance education programme. The reliability of each variable–independent variable (SSR), mediating variable (SM), and dependent variable (SS)–was tested using Cronbach's alpha. SSR with an alpha coefficient of .91, SM with .88, and SS with .95, all above .80, have good reliability, and all variables pass the reliability test. KMO and Bartlett's tests were conducted for all variables considered in the study. The suitability of all variables for factor analysis was verified with an SSR value of .90, SM value of .91, and SS value of .94. The p-value for all variables was .00, indicating significance.

3.3. Study Group

Data were collected from the students who participated in teacher pedagogical formation courses in Istanbul via Google Forms, Turkey, between the academic years 2020-2022 following the approval of the study by the university institutional ethics board. A survey package including research information, demographic form, and scales that measure the study constructs was given to the volunteer participants. They were informed that the survey would take 20–25 minutes. Data were collected from the stu-

dents who participated in the study. Nine students' records were cancelled because they responded to the survey questions with the same choice.

Online learning is a comprehensive term that includes several instructional environments and approaches. The different online learning programmes include synchronous versus asynchronous, open schedule, blended, and massive online courses. The Sloan Consortium (Allen & Seaman, 2006) categorized web-based learning environments based on the proportion of online content and activities as follows: (1) web-facilitated courses (1–29%), (2) blended/hybrid courses (30–79%), and (3) online courses (80+%).

This study focuses on higher education courses that deliver more than 80% of content and activities online. The Theology Undergraduate Completion Programme is a distance education initiative designed for students who have completed an associate degree programme in theology and have demonstrated proficiency in the external transfer examination. This programme was initially introduced as a distance education offering in Turkey and has since expanded to encompass ten distinct universities. The programme operates exclusively within an online learning environment, featuring a structured curriculum comprising one-hour synchronous lectures and supplementary asynchronous course materials. Student assessment is conducted through participation in multiple-choice midterm and final examinations administered at designated examination centres. The programme has a prescribed duration of two years, during which web conferencing software facilitates live lectures, and learning management systems support the delivery of asynchronous content. This academic endeavour provides a flexible pathway for theology students to further their education and acquire a comprehensive undergraduate degree.

3.4. Research Questions and Hypotheses

In this study, we propose a model to examine the relationship between SSR, motivation, and SS in distance education programmes. Specifically, the model proposes that motivation mediates the relationship between SSR and SS in distance education (Figure 1). This study aimed to advance the understanding of the factors affecting SS in distance education.

Research Question 1: To what extent does student self-regulation influence student motivation in distance education programmes?

Research Question 2: How does student motivation influence student satisfaction in distance education programmes?

Research Question 3: How does student self-regulation impact student satisfaction in distance education programmes?

Research Question 4: Does student motivation mediate the relationship between student self-regulation and student satisfaction in distance education programmes?

Research Question 5: To what degree does motivation partially mediate the relationship between student self-regulation and student satisfaction in distance education programmes?

This study posits that SSR positively impacts motivation, increasing student satisfaction levels. By examining these research questions and hypotheses, we aim to enhance our understanding of how SSR, motivation, and student satisfaction interact in the context of distance education.

- H1: SSR influences SM.
- H2: SM influences SS.
- H3: SSR influences SS.
- H4: SM mediates the relationship between SSR and SS.

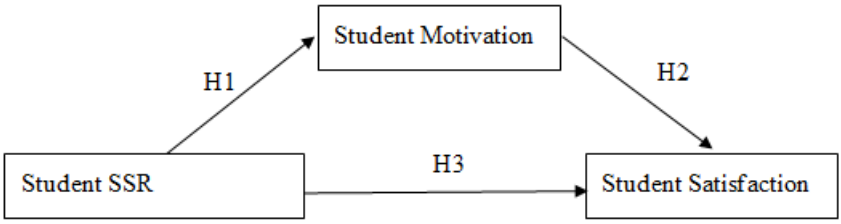

Figure 1 *Study model*

4. Research Findings

4.1. Demographic Findings

The data obtained from 321 students was analyzed using SPSS 24.0 software. The frequency and percentage distribution of the research participants' demographic characteristics were calculated. The descriptive statistics method was used in the first research problem, and the findings are presented in Table 1. Male students comprised 7.2% of students, and female students comprised 92.8% of the students in this study. The frequency and percentage of the gender and age variables are given in Table 1.

Table 1. *Frequency Analysis of Demographic Characteristics of Students*

	Gender	*f*	%
Gender	Male	23	7.2
	Female	298	92.8
	Total	321	100
Age	21-25	60	18,7
	26-30	58	18,1
	31-35	56	17,4
	36-40	92	28,7
	40+	55	17,1
	Total	321	100,0

4.2. Mediation Analysis Findings

4.2.1. Correlation Analysis

The results of the correlation analysis demonstrate that SSR is significantly and positively associated with both motivation and satisfaction, with motivation also displaying a significant and positive relationship with satisfaction. (Table 2).

Table 2. *Intercorrelations among study variables, mean (M), and standard deviation (SD) of variables.*

Variable	SS	SSR	SM	*M*	SD
Satisfaction	–	,38**	,27**	199.69	42.02
SSR	.38*	–	.29*	86.40	13.67
Motivation	.27*	.29*	–	139.13	2.41
**p < 0.001*					

4.2.2. Model for Student Motivation

The correlation coefficient (R) between SSR and SM is .389, indicating a positive relationship. The coefficient of determination (R-squared) is .152, indicating that SSR can explain 15.2% of the variance in SM. The regression model was statistically significant ($F(1, 319) = 56.977$, $p < 0.001$) (Table 3).

"The correlation coefficient (R) between SSR and SM is .389, indicating a positive relationship. The coefficient of determination (R-squared) is .152, suggesting that SSR can explain 15.2% of the variance in SM. The regression model was statistically significant ($F(1, 319) = 56.977$, $p < 0.001$) (Table 3)

The intercept term is 97.297. The coefficient estimate for SSR is .611 (SE = .081, t (319) = 7.548, p < 0.001, 95% CI [0.452, 0.771]). Hypothesis H1 is accepted regarding these values.

The model indicates that SM is expected to increase by .611 units for every one-unit increase in SSR. The standardized coefficient for SSR is .389, indicating that one standard deviation increase in SSR is associated with a .389 standard deviation increase in SM.

Table 3. *Results for Moderator Student Motivation*

Moderator: Student Motivation (SM) Model Summary							
	R	R-sq	MSE	F	df1	df2	p
	.389	.152	525.134	56.977	1	319	.000
Model	coeff	se	t	p	LLCI	ULCI	
constant	97.297	6.903	14.095	.000	83.716	11.877	
SSR	.611	.081	7.548	.000	.452	.771	
Standardized coefficients SSR .389							

4.2.3. Model for Student Satisfaction

The correlation coefficient (R) between SS, SM, and SSR is .523, indicating a positive relationship. The coefficient of determination (R-squared) is .274, indicating that SSR and SM can explain 27.4% of the variance in SS. The regression model was statistically significant (F (2, 318) = 59.942, p < 0.001) (Table 4).

The intercept term is 31.529. The coefficient estimate for SM is .465 (SE = .095, t (318) = 4.870, p < 0.001, 95% CI [0.277, 0.63]). Hypothesis H2 is accepted regarding these values.

The model indicates that every one-unit increase in SM is expected to increase SS by .465 units.

The standardized coefficient for SM is .253, indicating that a one standard deviation increase in SM is associated with a .253 standard deviation increase in SS.

The intercept term is 31.529. The coefficient estimate for SSR is 1.069 (SE = .150, t (318) = 7.137, p < 0.001, 95% CI [0.775, 1.364]). Hypothesis H3 is accepted regarding these values.

The model indicates that every one-unit increase in SSR is expected to increase SS by 1.069 units. The standardized coefficient for SSR is .253, indicating that a one standard deviation increase in SSR is associated with a .253 standard deviation increase in SS.

Table 4. *Results for Model Student Satisfaction*

	R	R-sq	MSE	F	df1	df2	p	
Model Summary SS	.523	.274	1525.644	59.942	2	318	.000	
Model	coeff	se	t	p	LLCI	ULCI		Std coeff
Constant	31.529	14.988	2.104	.036	2.040	61.017		
SSR	1.069	.150	7.137	.000	.775	1.364		.370
SM	.465	.095	4.870	.000	.277	.653		.253

4.2.4. Total Effect Model for SS

The correlation coefficient (R) between SS and SSR is .469, indicating a positive relationship. The coefficient of determination (R-squared) is .220, indicating that SSR can explain 22.0% of the variance in SS. The regression model was statistically significant ($F(1, 319) = 89.770$, $p < 0.001$) (Table 5).

The intercept term is 76.751. The coefficient estimate for SSR is 1.354 (SE = .143, $t(319) = 9.475$, $p < 0.001$, 95% CI [1.073, 1.635]), indicating that for every one-unit increase in SSR, SS is expected to increase by 1.354 units.

The standardized coefficient for SSR is .469, showing that a one standard deviation increase in SSR is associated with a .469 standard deviation increase in SS.

Table 5. *Total Effect Model for Student Satisfaction*

Model Summary	R	R-sq	MSE	F	df1	df2	p
	.469	.220	1634.308	89.770	1	319	.000
Model	coeff	se	t	p	LLCI	ULCI	
constant	76.751	12.177	6.303	.000	52.793	10.710	
SSR	1.354	.143	9.475	.000	1.073	1.635	
Standardized coefficients	.469						

4.2.5. Total, Direct, and Indirect Effects of Student Self-Regulation on Student Satisfaction

The total effect of SSR on SS was 1.354 (SE = .143, 95% CI [1.073, 1.635]). The direct effect of SSR on SS was 1.069 (SE = .150, 95% CI [0.775, 1.364]). The indirect effect of SSR on SS is mediated by SM, with an indirect effect of .284 (BootSE = .078, 95% bootstrap CI 0.149, 0.452]) (Table 6).

Table 6. *Total, Direct, and Indirect Effects of SSR on Student Satisfaction*

	Effect	se	t	p	LLCI	ULCI	c_cs
Total effect of X on Y	1.354	.143	9.475	.000	1.073	1.635	.469
Direct effect of X on Y	1.069	.150	7.137	.000	.775	1.364	.370
	Effect	BootSE	BootLLCI		BootULCI		
Indirect effect of X on Y	.284	.078	.149		.452		
Standardized indirect effect of X on Y	.098	.027	.051		.154		

Mediation analysis revealed that the indirect effect of SSR on SS through SM was statistically significant (indirect effect = .284, BootSE = .078, 95% bootstrap CI [0.149, 0.452]). It implies a mediating mechanism, precisely the motivational factor of SM, through which a portion of the relationship between SSR and SS operates. Nevertheless, it is imperative to emphasize that the direct influence of SSR on SS remained statistically significant (direct effect = 1.069, SE = .150, 95% CI [0.775, 1.364]). It indicates that SSR directly influences SS independent of its effect on SM. Therefore, the mediation can be considered partial because while SM partially explains the relationship between SSR and SS, there is still a significant direct effect of SSR on SS that SM does not mediate. Based on these results, Hypothesis H4 was verified.

Finally, the mediation between SSR and SS through the motivation to transfer SM was treated as partial. The results indicate that while SSR has a significant direct effect on SS, there is also an indirect effect through SM.

5. Discussion and Conclusion

The increasing prevalence of distance education has highlighted the need to understand the students' characteristics that affect the satisfaction and achievement in this mode of education. This study explored the relationship between student self-regulation, motivation, and satisfaction in distance education programmes. The findings of this study shed light on the mediation process between SSR and SS, with SM acting as a mediating factor. Examining SSR's direct and indirect effects on SS provides valuable insights into the role of self-regulation and motivation in shaping student outcomes in online learning environments.

The analysis conducted in this study revealed a partial mediation process between SSR and SS, with SM acting as a mediating factor in distance education programs. The findings highlight two essential components of this mediation: the direct effect of SSR on SS, and the indirect effect through SM. Notably, the results revealed a significant direct effect of SSR on SS, underscoring the fundamental role of self-regulated learning skills in shaping student satisfaction independently of the mediating variable motivation. The significant coefficient estimate associated with this

direct effect further emphasized the importance of SSR as a determinant of student satisfaction.

The direct effect of SSR on SS was substantial, indicating the fundamental role of SSR in shaping student satisfaction independently of other factors. In simple terms, students' SSR abilities directly determine their satisfaction levels, regardless of their level of motivation. Existing literature supports the connection between SSR and SS in online learning environments. Hamdan et al. (2021) and Landrum (2021) identified self-regulated learning as a significant predictor of student satisfaction. Similarly, Joo et al. (2012) and Miao and Ma (2022) highlighted the pivotal role of SSR in enhancing critical aspects of the online learning experience, such as motivation, engagement, and satisfaction. While Landrum (2021) noted that SSR does not consistently predict satisfaction, the preponderance of evidence reveals that SSR skills play a vital role in fostering positive and productive online learning outcomes among students. It is also supported by a recent meta-analysis demonstrating that SSR training programs positively affect academic performance and motivation, particularly for older students and those with lower academic achievement (Theobald, 2021).

The relationship between SSR and satisfaction was also related to motivation. Swafford (2018) found statistically significant relationships between online self-regulated learning and motivation constructs such as task value, self-efficacy, intrinsic and extrinsic motivation, control beliefs, and test anxiety. It highlights the interplay among SSR, motivation, and satisfaction in online learning contexts. Furthermore, the mediation analysis conducted in this study revealed a significant indirect effect of SSR on SS through the mediating factor of SM. This finding suggests that the motivational factors of SM explain part of the relationship between SSR and SS. In simpler terms, students with more SSR skills are more likely to be motivated, which, in turn, contributes to their overall satisfaction with their education. The statistical significance of this indirect effect underscores the role of motivation in the relationship between SSR and SS. Hettiarachchi et al. (2021) emphasized the role of motivation, which is closely related to self-regulated learning, in improving satisfaction with online learning. It underscores the importance of SSR in creating productive and student-friendly online learning environments for higher education. Additionally, Eden et al. (2022) conducted a study during the COVID-19 pandemic and found that SM, engagement, and satisfaction were higher in face-to-face classes. It emphasizes the importance of instructor characteristics and classroom interaction in shaping student satisfaction, engagement, and motivation. While online classes can be practical, certain aspects of in-person classes may contribute to higher levels of student satisfaction and engagement.

Further research is needed to explore the mechanisms and factors contributing to the relationship among SSR, motivation, and satisfaction. Understanding the interplay between SSR, motivation, and satisfaction in online learning environments can provide valuable insights for instructional design and support.

In conclusion, these findings emphasise the critical role of self-regulated learning skills for educational policymakers and distance education administrators, aiming to enhance student satisfaction and academic achievement. Further research could provide a more comprehensive understanding of student outcomes in education by examining the nuanced interactions between these variables and other student characteristics. These studies highlight the value of integrating self-regulated learning strategies and support in online education to optimize student success and satisfaction.

5.1. Suggestions

The categorized suggestions offer a structured approach to address the findings and improve the quality of distance education programmes. They emphasize skill development, instructional design, monitoring and assessment, ongoing research and institutional strategy, all in the context of this study's findings and the existing literature.

Category 1: Skill Development and Support

Encouraging SSR skills: Institutions should actively promote the development of SSR skills among students in distance education programmes. It can be achieved through targeted training, workshops, and resources to enhance students' ability to manage their learning effectively.

Balanced approach: Recognizing that while SSR is important, it is not a single predictor of student satisfaction. Institutions should adopt a balanced approach that combines their efforts to enhance SSR skills with strategies to boost motivation and overall satisfaction.

Personalized Support: Students may vary in their SSR abilities and motivations. Provide personalized support and resources to help students with different proficiency levels in SSR and motivation.

Category 2: Instructional Design and Faculty Training

Instructional Design: Instructional designers should consider integrating SRL principles into course design. Providing clear goals, structuring content effectively, and offering opportunities for self-assessment can support students' SSR efforts.

Faculty Training: Training instructors and faculty members to recognize the importance of SSR and motivation for student success. Equipping students with strategies to support them in these areas can positively im-

pact student satisfaction.

Cross-Institutional Collaboration: Institutions can collaborate and share best practices in fostering SSR and motivation among distance education students. Cross-institutional initiatives can lead to more effective strategies and collective efforts to improve students' satisfaction.

Category 3: Monitoring and Assessment

Monitoring and feedback: Implementing mechanisms for monitoring and assessing students' SSR skills and motivation levels throughout their distance education journey. Regular feedback and interventions can help to identify and address issues that may arise.

Longitudinal Studies: Conduct longitudinal studies to track how SSR skills and motivation evolve in distance education programmes. It can provide insight into these relationships' long-term effects and potential changes.

Category 4: Research and Institutional Strategy

Research Continuation: Encourage further research to investigate the mechanisms and factors influencing the relationship between SSR, motivation, and satisfaction in distance education. It can lead to more targeted interventions and improvements in educational practices.

Motivational Support: Recognizing the mediating role of motivation, educational institutions should implement strategies to boost students' motivation in online learning. It may include creating engaging and interactive course content, offering extrinsic incentives, and providing regular feedback and encouragement.

5.2. Limitations

This study provides valuable insights, but there are some limitations to consider. Firstly, the sample was drawn from a single Turkish university and religious distance education programme; second, limiting generalizability to other cultural contexts or fields of study. Self-reported measures also introduce subjective bias.

Future longitudinal research could better establish the directionality of the relationship between SRL and outcomes over time. Individual difference factors influencing distance learning success, such as language abilities or socioeconomic status, were not examined here but may provide a helpful context.

Expanding the international sample to include diverse cultures and education systems would enhance the understanding of how contextual factors impact SRL and academic performance. Comparative studies with traditional students could help to isolate the effects of distance learning.

Incorporating objective measures such as course grades and self-reports could offer a more complete picture.

Finally, qualitative approaches may offer deeper insights into distance learners' specific SRL challenges and practical strategies from their perspectives. Mixed methods combining surveys, interviews, and academic records would provide a multidimensional view of this complex issue. Replicating this research design with students at various educational levels could explore how SRL needs may differ across programs.

Although this study provides valuable initial insights, opportunities remain to build on its findings through a broader and more methodologically rigorous investigation.

References

Ainley, M. & Patrick, L. (2006). Measuring self-regulated learning processes through tracking patterns of student interaction with achievement activities. *Education Psychology Review*, 18, 267–286. https://doi.org/1.1007/s10648-006-9018-z

Allen, I. E., & Seaman, J. (2006). Growing by degrees: Online education in the United States, 2005. *Sloan Consortium (NJ1)*. https://files.eric.ed.gov/fulltext/ED530063.pdf

Allen, M., Bourhis, J., Burrell, N., & Mabry, E. (2002). Comparing student satisfaction with distance education to traditional classrooms in higher education: A meta-analysis. *The American journal of distance education*, *16*(2), 83-97. https://doi.org/1.1207/S15389286AJDE1602_3

Ambreen, M., Haqdad, A., & Saleem, W. (2016). Fostering self-regulated learning through distance education: a case study of m.phil secondary teacher education programme of Allama Iqbal Open University. *Turkish Online Journal of Distance Education, 17*(3). 120-135. https://doi.org/10.17718/tojde.89562

Angolia, M. G., & Pagliari, L. R. (2016). Factors for successful evolution and sustainability of quality distance education. *Online Journal of Distance Learning Administration*, *19*(3), n3.

Artino, A. R. (2009). Think, feel, act: Motivational and emotional influences on military students' online academic success. *Journal of Computing in Higher Education*, *21*, 146–166. https://doi.org/1.1007/s12528-009-9020-9

Artino, A. R., & McCoach, D. B. (2008). Development and initial validation of the online learning value and self-efficacy scale. *Journal of Educational Computing Research*, *38*, 279–303. https://doi.org/1.1177/1359105312439732

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioural change. Psychological Review, 84(2), 191–215. https://doi.org/10.1037/0033-295X.84.2.191

Barnard, L., Lan, W. Y., To, Y. M., Paton, V. O., & Lai, S.-L. (2009). Measuring SSR in online and blended learning environments. *The Internet and Higher Education, 12*(1), 1-6. https://doi.org/1.1016/j.iheduc.2008.1.005

Barnard, L., Paton, V., & Lan, W. (2008). Online self-regulatory learning behaviors as a mediator in the relationship between online course perceptions with achievement. *The International Review of Research in Open and Distributed Learning, 9*(2), 1-11. https://doi.org/1.19173/irrodl.v9i2.516

Boekaerts, M. (1999). Self-regulated learning: Where we are today. International. Journal of Educational Research, 31(6), 445–457. https://doi.org/1.1016/S0883-0355(99)00014-2

Bong, M., & Skaalvik, E. M. (2003). Academic self-concept and self-efficacy: How different are they really? Educational Psychology Review, 15(1),

1–40. https://doi.org/10.1023/A:1021302408382

Brophy, J. (1983). Conceptualizing student motivation. *Educational psychologist*, *18*(3), 200-215. https://doi.org/10.1080/00461528309529274

Burbuagh, B., Drape, T., & Westfall-Rudd, D. (2014). A descriptive account of factors affecting student satisfaction in an online master's degree in agriculture and life sciences. *NACTA Journal*, *58*(4), 341–348.

Cakir, O., Karademir, T., & Erdogdu, F. (2018). Psychological variables of estimating distance learners' motivation. *Turkish Online Journal of Distance Education*, *19*(1), 163-182. https://doi.org/1.17718/tojde.382795

Cascallar, E., Boekaerts, M., & Costigan, T. (2006). Assessment in the evaluation of SSR as a process. *Educational Psychology Review*, *18*(3), 297-306. https://doi.org/1.1007/s10648-006-9023-2

Chang, V., Liu, M., Xu, Q. A., & Xiong, C. (2022). Factors affecting student satisfaction in e-learning. *International Journal of Business and Systems Research*, *16*(4), 401-422. https://doi.org/1.1504/IJBSR.2022.123926

Chen, K. C., & Jang, S. J. (2010). Motivation in online learning: Testing a model of self-determination theory. *Computers in Human Behavior*, *26*(4), 741-752. https://doi.org/1.1016/j.chb.201.01.011

Choudhary, F., Mahmood, A., & Khushnood, S. (2020). Measuring SSR of distance learners: a comparative study of science and arts students. *International Journal of Distance Education and E-Learning*, 5(2), 138-157. https://doi.org/10.36261/ijdeel.v5i2.1048

Cole, M. T., Shelley, D. J., & Swartz, L. B. (2014). Online instruction, e-learning, and student satisfaction: A three-year study. *The International Review of Research in Open and Distributed Learning*, *15*(6). https://doi.org/1.19173/irrodl.v15i6.1748

Deci, E. L., & Ryan, R. M. (1985). Intrinsic motivation and self-determination in human behaviour. New York: Plenum.

Deci, E. L., & Ryan, R. M. (2008). Self-Determination Theory: A macro theory of human motivation, development, and health. *Canadian Psychology/Psychologie Canadienne, 49,* 182-185. https://doi.org/1.1037/a0012801

Deci, E. L., Vallerand, R. J., Pelletier, L. G., & Ryan, R. M. (1991). Motivation and education: The self-determination perspective. *Educational psychologist*, *26*(3-4), 325-346. https://doi.org/1.1080/0046152.1991.965313

Dede, N., Keskin, A., Öztürk, E., & Gülcan Keskin, M. (2021). Covid-19 süreci ile başlayan uzaktan eğitimde ortaokul öğrencilerinin öz düzenleme ve derse katılım ilişkisinin incelenmesi. *Dicle University Journal of Ziya Gokalp Education Faculty*, (39). http://dx.doi.org/1.14582/DUZGEF.2021.171

Deimann, M. & Bastiaens, T. (2010). The role of volition in distance education: an exploration of its capacities. *International Review of Research in Open and Distributed Learning*, *11*(1). 1-16. https://doi.org/1.19173/irrodl.v11i1.778

Dinh, T. C., Nguyen, P. B. N., Nguyen, T. T. T., Ngo, X. M. T., & Nguyen, A. T. L. (2022). The Predictors of Students' Satisfaction and Academic Achievements in Online Learning Environment in Higher Education. *Vietnam Journal of Education*, *6*(1), 80–92. https://doi.org/1.52296/vje.2022.132

Do, M. N., & Lai, P. H. (2023). The mediating role of self-efficacy in the relationship between the online learning environment and academic SSR. *Journal of Applied Research in Higher Education*. https://doi.org/1.1108/JARHE-11-2022-0371

Dörnyei, Z., & Ushioda, E. (2021). *Teaching and researching motivation*. Taylor & Francis.

El-aasar, S. A., & Farghali, G. F. (2022). Predictive study of the factors and challenges affecting the usability of e-learning platforms in the light of COVID-19. *International Journal of Education in Mathematics, Science, and Technology (IJEMST)*, 10(3), 568-589. https://doi.org/1.46328/ijemst.2428

Elliott, K. M., & Healy, M. A. (2001). Key factors influencing student satisfaction related to recruitment and retention. *Journal of marketing for higher education*, *10*(4), 1-11. https://doi.org/1.1300/J050v10n04_01

Goulimaris, D. (2015). The relation between distance education students' motivation and satisfaction. *Turkish Online Journal of Distance Education*, *16*(2), 13-27. https://doi.org/1.17718/TOJDE.50678

Hamdan, K., Al-Bashaireh, A., Zahran, Z., Al-Daghestani, A., AL-Habashneh, S., & Shaheen, A. (2021). University students' interaction, internet self-efficacy, SSR and satisfaction with online education during pandemic crises of covid-19 (sars-cov-2). *International Journal of Educational Management*, *35*(3), 713-725. https://doi.org/1.1108/ijem-11-2020-0513

Hart, C. (2012). Factors associated with student persistence in an online programme of study: A review of the literature. *Journal of Interactive Online Learning*, *11*(1), 19-42

Hayes, 2013. *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. New York, NY: Guilford Press.

Hettiarachchi, S., Damayanthi, B., Heenkenda, S., Dissanayake, D., Ranagalage, M., & Ananda, L. (2021). Student satisfaction with online learning during the covid-19 pandemic: a study at state universities in Sri Lanka. *Sustainability*, *13*(21), 11749. https://doi.org/1.3390/su132111749

Hood, N., Littlejohn, A., & Milligan, C. (2015). Context counts: How learners' contexts influence learning in a MOOC. *Computers & Education*, *91*, 83–91. https://doi.org/1.1016/j.compedu.2015.1.019

Hung, M. L., Chou, C., Chen, C. H., & Own, Z. Y. (2010). Learner readiness for online learning: Scale development and student perceptions. *Computers & Education, 55*(3), 1080–109. https://doi.org/1.1016/j.compedu.201.05.004

Inan, F., Yukselturk, E., Kurucay, M., & Flores, R. (2017). The impact of SSR strategies on student success and satisfaction in an online course. *International Journal on E-Learning*, *16*(1), 23–32.

James, P. C. (2021). What Determines Student Satisfaction in an E-Learning Environment? A Comprehensive Literature Review of Key Success Factors. *Higher Education Studies*, *11*(3), 1-9. https://doi.org/1.5539/hes.v11n3p1

Jennifer, Eden., Ryan, Rogers., Nadine, Hoffman. (2022). Impacting Student Satisfaction, Engagement and Motivation in Online and Traditional Classrooms. *Kome*, *10*(2), 60-75. https://doi.org.10.17646/kome.75672.91

Joo, Y., Joung, S., & Kim, J. (2012). Structural relationships among self-regulated learning, learning flow, satisfaction, and learning persistence in cyber universities. *Interactive Learning Environments*, *22*(6), 752-77. https://doi.org/1.1080/1049482.2012.745421

Kaplan, A. (2008). Clarifying metacognition, SSR, and self-regulated learning: What's the purpose? *Educational Psychology Review*, *20*(4), 477-484.

Karaguven, M. (2012). The Adaptation of Academic Motivation Scale to Turkish. *Educational Sciences: Theory and Practice*, *12*(4), 2611-2618.

Kazu, I. Y., & Yalçin, C. K. (2022). Investigation of the Effectiveness of Hybrid Learning on Academic Achievement: A Meta-Analysis Study. *International Journal of Progressive Education*, *18*(1), 249-265.

Kebritchi, M., Lipschuetz, A., & Santiague, L. (2017). Issues and challenges for teaching successful online courses in higher education: A literature review. *Journal of Educational Technology Systems, 46*(1), 4–29. https://doi.org/1.1177/0047239516661713

Keržič D, Alex JK, Pamela Balbontín Alvarado R, Bezerra DdS, Cheraghi M, Dobrowolska B, et al. (2021) Academic student satisfaction and perceived performance in the e-learning environment during the COVID-19 pandemic: Evidence across ten countries. PLoS ONE 16(10): e0258807. https://doi.org/1.1371/journal.pone.0258807

Kilis, S., & Yildirim, Z. (2018). Online SSR questionnaire: Validity and reliability study of Turkish translation. *Cukurova University Faculty of Education Journal*, *47*(1), 233-245. https://doi.org/1.14812/cuefd.298791

Kirmizi, Ö. (2015). The influence of learner readiness on student satisfaction and academic achievement in an online programme at higher education. *Turkish Online Journal of Educational Technology*, *14*(1), 133–142.

Kizilcec, R. F., Pérez-Sanagustín, M., & Maldonado, J. J. (2017). Self-regulated learning strategies predict learner behavior and goal attainment in Massive Open Online Courses. *Computers & Education, 104*, 18–33. https://doi.org/1.1016/j.compedu.2016.10.001

Kukul, V. Y., & Şimşek, N. T. D. (2011). *Bilgi teknolojilerine dayalı uzaktan eğitimde öğrencilerin ve öğretim elemanlarının doyum düzeylerinin belir-*

lenmesi (Doctoral dissertation, Ankara University), https://kitaplar.ankara.edu.tr/xmlui/handle/2.50.12575/30459

Landrum, B. (2020). Examining students' confidence to learn online, SSR skills and perceptions of satisfaction and usefulness of online classes. *Online Learning*, *24*(3). https://doi.org/1.24059/olj.v24i3.2066

Lehmann, T., Hähnlein, I., & Ifenthaler, D. (2014). Cognitive, metacognitive and motivational perspectives on preflection in self-regulated online learning. *Computers in Human Behavior, 32*, 313–323. https://doi.org/1.1016/j.chb.2013.07.051

Magisan, G., & Prestousa, T. M. (2023). Measuring the Academic Motivation and Satisfaction of Online Learners. *Ubiquitous Learning*, *17*(1), 17. https://doi.org/1.18848/1835-9795/CGP/v17i01/17-34

Margrain, S. A. (1978). Student characteristics and academic performance in higher education: A review. *Research in Higher Education*, *8*, 111-123. https://doi.org/1.1007/BF00992113

Marsh, H. W., & Shavelson, R. (1985). Self-concept: Its multifaceted, hierarchical structure. Educational Psychologist, 20(3), 107–123. https://doi.org/10.1207/s15326985ep2003_1

Martin, F., & Bolliger, D. U. (2022). Developing an online learner satisfaction framework in higher education through a systematic review of research. *International Journal of Educational Technology in Higher Education*, *19*(1), 1-21. https://doi.org/1.1186/s41239-022-00355-5

Miao, J. and Ma, L. (2022). Students' online interaction, SSR, and learning engagement in higher education: the importance of social presence to online learning. *Frontiers in Psychology*, *13*. https://doi.org/1.3389/fpsyg.2022.815220

Moore, J. C. (2005). The Sloan Consortium quality framework and the five pillars. Sloan Consortium. 1-9.

Moore, M.G., & Diehl, W.C. (Eds.). (2018). Handbook of Distance Education (4th ed.). Routledge. https://doi.org/1.4324/9781315296135

Paechter, M., Maier, M., & Macher, D. (2010). Students' expectations of, and experiences in e-learning: Their relation to learning achievements and course satisfaction. *Computers & Education*, *54*, 222–229. https://doi.org/1.1016/j.compedu.2009.08.005

Pinanos, R., Curayag, M., Enoroba, M. K., Martinez, J., Penales, F., Socorin, J. R., ... & Estonina, O. (2022). Online Learning Satisfaction and Learning Motivation among Hospitality Management Students. *University of Bohol Multidisciplinary Research Journal*, *10*(1), 105-118. https://doi.org/1.15631/ubmrj.v10i1.168

Pintrich, P. R. (2000). Multiple goals, multiple pathways: The role of goal orientation in learning and achievement, *Journal of Educational Psychology*, *92*(3), 544–555. https://doi.org/1.1037/0022-0663.92.3.544

Pintrich, P. R. (2003). A motivational science perspective on the role of student motivation in learning and teaching contexts. *Journal of Educational Psychology*, *95*(4), 667. https://doi.org/1.1037/0022-0663.95.4.667

Puzziferro, M. (2008). Online technologies self-efficacy and self-regulated learning as predictors of final grade and satisfaction in college-level online courses. *The American Journal of Distance Education*, *22*, 72–89. https://doi.org/1.1080/08923640802039024

Rahman, H. (2014). The role of ICT in open and distance education. *Turkish Online Journal of Distance Education*, *15*(4), 162-169.

Rajabalee, Y. B., & Santally, M. I. (2021). Learner satisfaction, engagement and performances in an online module: Implications for institutional e-learning policy. *Education and Information Technologies*, *26*(3), 2623-2656. https://doi.org/1.1007/s10639-020-10375-1

Rakes, G., & Dunn, K. (2010). The impact of online graduate students' motivation and SSR on academic procrastination Learning. *Journal of Interactive Online, 9*(1), 78–93.

Rashid, N., & Rashid, M. (2012). Note for editor: Issues and problems in distance education. *Turkish Online Journal of Distance Education*, *13*(1), 20-26.

Rizwan, M., & Iftikhar, I. (2019). Factors affecting student satisfaction in distance learning: A case study. *The Journal of Educational Paradigms*, *1*(2), 50-56.

Rovai, A. P., & Downey, J. R. (2010). Why some distance education programmes fail while others succeed in a global environment. *The Internet and Higher Education*, *13*(3), 141-147.

Ryan, R. M., & Deci, E. L. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary educational psychology*, *25*(1), 54-67. https://doi.org/1.1006/ceps.1999.102.

Ryan, R. M., & Deci, E. L. (2020). Intrinsic and extrinsic motivation from a self-determination theory perspective: Definitions, theory, practices, and future directions. *Contemporary educational psychology*, *61*, 10186. https://doi.org/1.1016/j.cedpsych.202.101860

Sauvé, L., Racette, N., Papi, C., Gérin-Lajoie, S., Desjardins, G., Marineau, S. (2019). SSR Strategies of Students Enrolled in a Distance and Online University Education Programme. In: Herzog, M., Kubincová, Z., Han, P., Temperini, M. (eds) Advances in Web-Based Learning – ICWL 2019. ICWL 2019. Lecture Notes in Computer Science(), vol 11841. Springer, Cham. https://doi.org/10.1007/978-3-030-35758-0_16

Schunk, D. H. (1995). Self-efficacy, motivation, and performance, *Journal of Applied Sport Psychology*,*7*:(2),112-137, https://doi.org/1.1080/10413209508406961

Schunk, D. H. (2012). *Learning theories an educational perspective*. Pearson Education, Inc.

Schunk, D. H., & Ertmer, P. A. (2000). SSR and academic learning: Self-efficacy enhancing interventions. In *Handbook of SSR* (pp. 631-649). Academic Press. https://doi.org/1.1016/B978-012109890-2/50048-2

Shulruf, B., Hattie, J., & Tumen, S. (2008). Individual and school factors affecting students' participation and success in higher education. *Higher education*, *56*, 613-632. https://doi.org/1.1007/s10734-008-9114-8

Simons, J., Leverett, S., & Beaumont, K. (2020). Success of distance learning graduates and the role of intrinsic motivation. *Open Learning: The Journal of Open, Distance and e-Learning*, *35*(3), 277-293. https://doi.org/1.1080/02680513.2019.1696183

Simonson, M., Schlosser, C., & Orellana, A. (2011). Distance education research: A review of the literature. *Journal of Computing in Higher Education*, *23*, 124-142.

Steinmayr, R., Weidinger, A. F., Schwinger, M., & Spinath, B. (2019). The Importance of Students' Motivation for Their Academic Achievement - Replicating and Extending Previous Findings. *Frontiers in Psychology*, *10*, 173. https://doi.org/1.3389/fpsyg.2019.01730

Sun, J. & Rueda, R. (2011). Situational interest, computer self-efficacy and SSR: their impact on student engagement in distance education. British Journal of Educational Technology, 43(2), 191-204. https://doi.org/10.1111/j.1467-8535.2010.01157.x

Sun, P., Tsai, R., Finger, G., & Chen, Y. (2008). What drives successful e-learning? An empirical investigation of the critical factors influencing learner satisfaction. *Computers & Education*, *50*(4), 1183–1202.

Swafford, M. (2018). The relationship between motivation and online self-regulated learning. *Journal of Human Sciences and Extension*, *6*(3), 6. https://doi.org/10.54718/AWIJ9321

Theobald, M. (2021). Self-regulated learning training programmes enhance university students' academic performance, self-regulated learning strategies, and motivation: A meta-analysis. *Contemporary Educational Psychology*, *66*. https://doi.org/10.1016/J.CEDPSYCH.2021.101976

Turan, Z., Kucuk, S., & Cilligol Karabey, S. (2022). The university students' self-regulated effort, flexibility and satisfaction in distance education. *International Journal of Educational Technology in Higher Education*, *19*(1), 1-19. https://doi.org/1.1186/s41239-022-00342-w

Vohs, K. D., & Baumeister, R. F. (2016). Desire of SSR. In KD. Vohs & R.F. Baumeister (Eds.), *Handbook of SSR: Research, theory, and applications*. (pp. 76-94). Guilford Publications. https://doi.org/1.1016/j.paid.2021.111173

Vollmeyer, R., & Rheinberg, F. (2006). Motivational effects on self-regulated learning with different tasks. *Educational Psychology Review*, *18*(3), 239-253. https://doi.org/1.1007/s10648-006-9017-0

Wang, C., Shannon, D., & Ross, M. (2013). Students' characteristics, self-regulated learning, technology self-efficacy, and course outcomes in online learning. *Distance Education, 34*(3), 302–323.

Wigfield, A., Tonks, S., & Klauda, S. L. (2015). Expectancy-value theory. In Handbook of educational psychology (3rd ed., pp. 55-75). Routledge.

Wu, Y., Xu, X., Xue, J., & Hu, P. (2023). A cross-group comparison study of the effect of interaction on satisfaction in online learning: The parallel mediating role of academic emotions and self-regulated learning. *Computers & Education*, *199*, 104776. https://doi.org/1.1016/j.compedu.2023.104776

Yick, A., Patrick, P., & Costin, A. (2005). Navigating distance and traditional higher education: online faculty experiences. *The International Review of Research in Open and Distributed Learning*, *6*(2). https://doi.org/1.19173/irrodl.v6i2.235

You, J., & Kang, M. (2014). The role of academic emotions in the relationship between perceived academic control and self-regulated learning in online learning. *Computers & Education*, *77*, 125–133. https://doi.org/1.1016/j.compedu.2014.04.018

Yukselturk, E., & Bulut, S. (2007). Predictors for student success in an online course. *Journal of Educational Technology & Society*, *10*(2), 71–83. https://www.jstor.org/stable/jeductechsoci.1.2.71

Zhu, Y., Zhang, J. H., Au, W., & Yates, G. (2020). University students' online learning attitudes and continuous intention to undertake online courses: A self-regulated learning perspective. *Educational technology research and development*, *68*, 1485-1519. https://doi.org/1.1007/s11423-020-09753-w

Zimmerman, B. J. (1989). A social cognitive view of self-regulated academic learning. *Journal of Educational Psychology, 81*(3), 329. https://doi.org/1.1037/0022-0663.81.3.329

Zimmerman, B. J. (1990). Self-regulated learning and academic achievement: An overview. *Educational Psychologist, 25*(1), 3–17. https://doi.org/1.1207/s15326985ep2501_2

Zimmerman, B. J. (2000). Attaining SSR: A social cognitive perspective. In *Handbook of SSR* (pp. 13-39). Academic press. https://doi.org/1.1016/B978-012109890-2/50031-7

Zimmerman, B. J. (2001). Theories of self-regulated learning and academic achievement: An overview and analysis. In B. J. Zimmerman & D. H. Schunk (Eds.), Self-regulated learning and academic achievement: Theoretical perspectives (pp. 1–37). Lawrence Erlbaum Associates Publishers.

Zimmerman, B. J. (2002). Becoming a self-regulated learner: An overview. *Theory Into Practice*, *4*(2). 64-7. https://doi.org/1.1207/s15430421tip4102_2

Zimmerman, B. J., & Schunk, D. H. (2004). Self-regulating intellectual processes and outcomes: A social cognitive perspective. *Motivation, emotion, and*

cognition: Integrative perspectives on intellectual functioning and development, 323-349.

Zixian, Y., Zhang, H., Zheng, Z., Yang, Y., & Li, Q. (2022) The Influence of Motivation and SSR Ability on Students' online Learning Satisfaction. International Conferences e-Society 2022 and Mobile Learning.

CHAPTER 5

ADULT EDUCATION: ORGANIZATIONS AND ADMINISTRATION

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Memorized and clichéd definitions of educational concepts occupy books and minds. However, these definitions, which lack epistemological, ontological, and etymological foundations, cannot go beyond being memorized information and cannot form a basis for rational discussions. While there are misconceptions about the basic concepts of education such as education, teaching, learning, and training (Duman, 2003), the concepts of basic education, secondary education, or higher education cause people to be confused. When it comes to adult education, the situation becomes a little more complicated. Because adult education can take place in any kind of building or without any building, covering all kinds of people, without a structured curriculum, and even without being directly called adult education, but under the name of staff development, in-service training, continuing education, and lifelong education (Knowles, 1980). In addition, liberal adult education emerged as a concern in civil society, grew as a social movement, and turned into a service that the state should provide as a result of the welfare state approach, focusing on vocational education and training in recent years (Jarvis, 1993). In other words, adult education has turned from a community-based cultural and social initiative into an individual and selfish project (Shizha and Abdi, 2009). Indeed, under the influence of neoliberal policies, the concepts of lifelong education and even lifelong learning have replaced adult education in the post-globalization process, in a setting where international organizations have an impact in many issues (Bowl, 2017; Iliman Püsküllüoğlu, 2023). The use of lifelong learning as an umbrella concept and its global spread have negatively affected the field of adult education (Popović, 2014, cited in Popović and Reischmann, 2017). In addition, although the relationship of adult education with other disciplines is important, the field has suffered character erosion in the process of being handled interdisciplinary, which has led to the questioning of the importance, originality, and value of the field (Collins, 2021). Despite all these, considering that there are 773 million illiterate adults in the world (United Nations Educational, Scientific and Cultural Organization [UNESCO], 2020), it can be said that the demand for adult education is high even in the context of basic literacy (Muirhead, 2017). Moreover, when technology, leisure time activities, changing values and changing labor markets are added to the equation, the demand for adult education seems to be growing rapidly (Kowalski, 1998). This situation causes many forms of adult education to become a part of government policies and makes it important to use a political understanding on the subject (Jarvis, 1993). The existing demand and the need to build a political awareness of the subject necessitate addressing adult education administration.

Adult education administration plays an important role in the development and effectiveness of adult education organizations (Demir, 2020).

Every school and adult education program needs skilled educational administrators to organize their educational activities (Camenson, 2008). The adult education discipline interacts with many disciplines and departments where adult education takes place, such as lifelong learning, higher education, continuing education, organization and leadership, educational administration, policy studies, student affairs, academic advising, and human resource development (Collins, 2021). In relation to this situation, adult education administrators can work in schools, faculties, universities, technical institutes, businesses, museums, training programs, non-governmental organizations (Camenson, 2008). The organization and administration of adult education, which interacts with so many disciplines and departments and operates in many areas of life, is related to adult education, but it corresponds to a different dimension of adult education. So, in order to run adult education programs effectively, it is necessary to have a good command of adult education literature as well as business and management literature (Biniecki and Schmidt, 2021). Exploring educational administration literature, which differs from business and management literature, is also significant in this regard. Since adult education organizations have their own unique textures, the coexistence of adult learners and educators makes it necessary to employ an educational administration approach specific to these organizations. The primary objective of this research is to look at adult education from the standpoint of organization and administration, and to provide assessments on adult education organizations and administration after looking at adult education in general. In this context, firstly, adult education is discussed in the context of definitions, historical development, and philosophical foundations. The study is then wrapped up with evaluations that can serve as a conclusion on adult education from the perspective of organization and administration.

Definitions, Historical Development, and Philosophical Foundations

In this section of the study, which aims to make evaluations in the context of organizations and administration in adult education, definitions related to adult education, historical development and philosophical foundations of adult education are given. In this context, firstly, how the adult is defined is discussed. Then, adult education is tried to be defined, and adult learning is clarified, which cannot be separated from definitions of adult education. Andragogy and its essential characteristics are discussed within the context of adult learning. Following the definitions, the historical evolution of adult education is briefly discussed. Finally, adult education philosophies that influence adult education quality, adult education organizations and administration are presented.

Adult is a concept that is easy to understand but difficult to define (Hunt, 2005). Adult is used as both a noun and an adjective and can have different connotations and emphases in different contexts. Adult is usually defined in reference to a child (Paterson, 2010) and means someone who has grown up, is mature or has reached the age of maturity (Hunt, 2005). While adulthood is defined as the period after the end of childhood (Paterson, 2010). Although it is possible to define adulthood in legal, biological, social, and psychological terms (Duman, 2007), adulthood is often defined in terms of age. However, adulthood is not about age, but about what emerges with aging (Tight, 2002). In this context, the characteristics of adults are tried to be understood in relation to the developmental periods that are handled within the framework of age.

It is difficult to provide a single, universally accepted, and ubiquitous definition of adult education. What adult education encompasses varies according to time, culture, and institutions (Rubenson, 2010). This causes adult education to take on a meaning that changes according to where you stand and what you experience, as in the story of the elephant and the five blind men (Merriam and Brockett, 1997). Apart from the changing meaning of adult education over time, the breadth of the scope of adult education also makes it difficult to define. The scope of adult education covers adult basic education including basic literacy and numeracy skills, education of migrants and citizens, adult higher education, workplace education and training, community education, popular adult education, museums, radio, television, and libraries (Rubenson, 2010). The fact that the scope is so broad explains why there cannot be a single definition that applies in all situations.

Definitions of adult education are generally shaped around the adult status of the learner and the purposeful or planned nature of the activity (Merriam and Brockett, 1997). In the *International Dictionary of Adult and Continuing Education*, adult education is used in the contexts of (1) a social institution, (2) a means of liberation, (3) an organized and empowered form of communication, (4) a democratic social movement, (5) education of adults. While it is not easy to define adult education, the concept of education of adults is also encountered in the definition of the concept. The term education of adults refers to a broader idea than adult education, which encompasses all forms of adult education and is connected to the conceptualization of both education and adults. Regarding adult education, the dictionary also includes UNESCO's 1976 definition of adult education (Jarvis & Wilson, 2005). In the context of international organizations, there is also adult education definition of Organization for Economic Co-operation and Development (OECD) (Duman, 2007). As a result, international organizations and the literature approach adult education in different contexts and define it in various ways.

Adult education, which has a very broad scope and is used in different contexts, can be considered in three different senses. In the broadest sense, adult education refers to the learning process of adults. This process encompasses all the experiences of adults in acquiring new knowledge, understanding, skills, attitudes, interests, or values. In its technical sense, adult education refers to the organized activities conducted by several institutions to achieve certain educational goals. These activities include organized classes, study groups, seminars, planned reading programs, guided discussions, conferences, workshops, and courses. The third meaning is a movement or a field of social practice that encompasses all these processes and activities. In this context, adult education is a distinct social system that brings together all individuals, institutions and associations concerned with the education of adults, and this system contributes to adult learning, improves learning opportunities for adults and fosters the development of culture (Knowles, 1980).

Definitions of adult education are often based on learning. In fact, education and learning are like two ends of a spectrum and it is difficult to make clear distinctions between the two. Learning encompasses education and training and is at the center of human life (Tight, 2002). People learn continuously, formally, or informally, in many different settings, at work, in the family, in leisure activities, in community activities, in political action (Foley, 2004). The classification of learning activities according to whether they are intentional or unintentional in terms of those who organize and participate in the activities reveals different types of learning. In formal learning, both the participant and the organizer of learning are willing and conscious. In informal learning, at least one of the participants and the organizer of learning is unintentional. In incidental learning, both the learner and the organizer of learning are unintentional (Duman, 2007). Learning can be formal, non-formal or informal, but what needs to be questioned here is whether learning that takes place in informal environments can be called education (Jarvis, 1993). As a result, considering that the main feature of adult education activities is planned, programmed and intentional, only formal learning can be considered in the context of adult education (Duman, 2007).

Although adult learning is a phenomenon frequently encountered in daily life, it is quite difficult to define (Merriam, 2010). Because there is no single definition of adult learning, nor is there a single theory or model that explains why and how adults learn. However, adult learning is one of the main key concepts uniting the field of adult education (Merriam, 2005). The basic assumptions about adult learning put forward by Lindeman (1926) in the early 20th century are important in the theorization of adult learning and are still valid. In this context, it is stated that (1) adults

are motivated to learn as the learning satisfies their interests and needs, (2) adults have an experience-centered learning orientation, (3) experience is important in adult learning, (4) adults need to be self-directed, and (5) individual differences increase with age (as cited in Knowles, Holton III, and Swanson, 2005). In addition to these assumptions about adult learning, the impact of issues such as problem solving, information processing, memory, intelligence, and motivation, which behavioral and cognitive psychologists address in their studies, on the life situations and experiences of adults have contributed to the understanding of adult learning (Merriam, 2005). In parallel with the development of adult education as a discipline, adult learning continued to develop in the context of andragogy, self-directed learning and transformative learning as adult education began to exist with its professional associations, journals, and conferences (Merriam, 2010).

Although there are different assumptions regarding the theorization of adult learning, andragogy, which emerged in the mid-20th century, is still valid (Duman, 2007). The basic principles of andragogy are (1) the learner's need to find answers to what, how and why questions, (2) the learner's autonomy and self-orientation, (3) the learner's previous learning experiences, (4) the learner's readiness to learn in relation to life and developmental tasks, (5) learning orientation, (6) learning motivation. In addition, the learner's own individual characteristics, situational differences and learning goals also affect adult learning. In other words, andragogy approaches produce the best results as long as they adapt to the uniqueness of the learner and the specificity of the learning situation (Knowles, Holton III, and Swanson, 2005). As a result, the principles of andragogy, which is put forward half a century ago, still outline adult learning and continue to guide those who work with adults (Merriam, 2010).

There is no clear dating of the origins of adult education, which has such a diversity of definitions and scope. The origins of adult education can be traced back to antiquity (Knowles, 1980). In fact, the development of modern adult education in the West can be handled based on different criteria in the context of different classifications (Yıldız, 2021). Events such as the Renaissance and reform movements, colonial developments, and the industrial revolution, which changed the development of the history of thought, have influenced adult education as well (Bowl, 2017). With the impact of the Enlightenment on the emergence of modern thought, Albert Mansbridge, Basil Yeaxlee and R. H. Tawney in the United Kingdom (UK), John Dewey, E. L. Thorndike and Eduard Lindeman in the United States (USA) contributed to the formation and development of adult education (Jarvis, 2001a). Adult education emerged as a social movement and pioneering adult educators shaped the field in line with the ideals set forth at the beginning. Along with social and ethical concerns, pioneering adult educators wanted adult education to

transform national education systems so that all adults could benefit from education (Jarvis, 2001b). With the establishment of a department related to adult education at the University of Nottingham in the UK in 1920 and the introduction of the adult education course at Columbia University in the USA in 1922, the field began to exist as a scientific discipline. In Turkey, the establishment of Ankara University Faculty of Education in 1965, its transformation into the Faculty of Educational Sciences in 1981, and public common education courses and doctoral degrees given correspond to the stages of the development of adult education as a discipline (Duman, 2007). Since the second half of the 20th century, adult education has been developing in a different dimension with the influence of globalization, sometimes within the framework of lifelong education and often within the framework of lifelong learning conceptualization (Iliman Püsküllüoğlu, 2023; Jarvis, 2001b).

Throughout the historical process, different adult education philosophies have emerged as a result of the combination of the struggle for knowledge and power with the adult education movement (Bowl, 2017). These adult education philosophies are inextricably linked to philosophical movements and educational philosophies (Merriam and Brockett, 1997). In this study, Zinn's (1998 cited in Scott, Mizzi, and Merriweather, 2021) classification is employed:

- The key concepts of *liberal adult education philosophy* are liberal learning and intellectual development. In this philosophy, the main purpose of adult education is society and general education. Among the leading names of liberal adult education are Houle, Kallen and Adler.

- The key concepts of *behaviorist adult education philosophy* are learning goals and performance measurements. In this philosophy, the general aim of adult education is the achievement of learning goals based on competence, mastery, and performance. Thorndike, Skinner, and Tyler are among the pioneers of behaviorist adult education.

- The key concepts of *critical adult education philosophy* are critical thinking and social justice. In this philosophy, the general aim of adult education is to ensure the social action through critical thinking and transformation-based education. Freire and Brookfield are among the pioneers of critical adult education philosophy.

- The key concepts of *analytical adult education philosophy* are discussion, decision-making, critical and rational thinking. In this philosophy, the aim of adult education is to develop and clarify logical reasoning. Pioneers of analytic philosophy include Lawson and Paterson.

- The key concepts of *post-modern adult education philosophy* are deconstruction and cultural practices. In this philosophy, the aim of adult

education is to discuss social practices using deconstruction and to draw attention to cultural practices. Among the pioneers of post-modern adult education philosophy are Usher, Bryant, and Johnston.

- The key concepts of *progressive adult education philosophy* are experience and problem solving. The aim of adult education in this philosophy is to prioritize practical knowledge, society, and democracy. Lindeman, Dewey and Bergevin are among progressive adult educators.

- The key concepts of *humanist adult education philosophy* are freedom, autonomy, and self-actualization. The aim of adult education in this philosophy is autonomous and self-directed individual growth. Among the pioneers of humanist adult educators are Knowles, Though and McKenzie.

As can be seen, there are seven basic adult education philosophies, namely liberal, behaviorist, analytical, radical/critical, post-modern, progressive, and humanistic, whose focus varies from society to the individual. Because they grow simultaneously with adult education's scientization process as well as scientific and worldwide advances, the adult education philosophies covered by this classification have an impact on how adult education is practically applied in various contexts. The ideas of each adult education pioneer who contributed to the creation of various adult education philosophies are very significant for the field. However, no adult education philosophy is valid in all circumstances and with all its assumptions. Still, by comprehending each adult education philosophy, the best adult education philosophy can be used depending on the objectives and circumstances.

Adult Education from Organizations and Administration Perspective

Adult education in terms of definition, historical development, and philosophical foundations was examined in the preceding section of the study, which goals to make evaluations in the framework of organizations and administration in adult education. Thus, the theoretical framework for the evaluation of adult education from the perspective of organizations and administration has been proposed. In this part of the study, firstly, the goals of adult education, adult education organization and administration paradigms are discussed. Then, the factors affecting adult education organizations and administration are explored using Kowalski's (1998) classification of *environment, organization, program and learners*, but not limited to this classification. First, the environmental factors affecting adult education organizations and administration are discussed, and in this context, the effects of the market are also mentioned. Then, the program and learner-related factors affecting adult education organizations and administration are

outlined. In this context, different adult education organizations are also mentioned. Finally, organizational factors affecting adult education organizations and administration are examined. The reason for taking organizational factors last is to evaluate adult education more comprehensively in the context of organizations and administration. Regarding organizational factors, administrative processes in adult education organizations, adult education administrators and leadership in adult education are presented. Finally, the study ends with evaluations related to adult education organizations and administration.

Considering that the reason organizations come together are the goals, it can be argued that aims are decisive in organization and administration. Based on this assumption, in this section of the study, the aims of adult education and adult education paradigms are discussed. Although there are many different classifications regarding the aims of adult education, Bryson's (as cited in Merriam and Brockett, 1997) 1936 classification is the most basic one. This classification is in line with other classifications: *The liberal purpose of adult education* is to raise educated people. Knowledge is considered valuable as its own sake. Studying social sciences or natural sciences can be considered in this context. *The occupational purpose of adult education* is vocational preparation. On-the-job and workplace training and skill development courses can be considered within the scope of this purpose, which is fostered by the understanding of human resource development. *The relational purpose of adult education* is to improve the individual's relationships and self-confidence, and to ensure the individual's self-actualization. All learning related to home, family or leisure time can be considered in this context. *The remedial purpose of adult education* is to help individuals acquire some basic skills. In this context, adult basic education programs that assist adults in learning to read, high school completion programs, and other fundamental skill-development programs are all offered. *The political purpose of adult education* is to create a democratic society. The activities necessary for citizens to be fully engaged can be considered in this context (Merriam & Brockett, 1997). As can be seen, the liberal, vocational, relational, remedial, and political aims of adult education are instrumental in enabling adults to acquire knowledge, acquire skills, strengthen their social relations, and improve their lives and society.

There are also adult education paradigms that are structured in line with adult education aims: *Modernization and human capital theories* see adult education as a key variable in the development of traditional societies and economic progress. *Pedagogy of the Oppressed and popular education theorists* see adult education as a means for the political and pedagogical empowerment of lower social classes. *Pragmatic idealism* reflects an international understanding of adult education that emerged based on

andragogy, the ideas of John Dewey, the Faure Report and has evolved over the years. In *social engineering theory*, adult education prepares the ground for a post-industrial society where bureaucratic logic eliminates or renders irrelevant all social class differences (Torres, 2013). As can be seen, different adult education paradigms pave the way for the emergence of different adult education organizations (Avdagic, 2017). In other words, adult education paradigms reveal the logic of how adult education services are carried out and organized (Torres, 2013). Like adult education philosophies, it is not possible to speak of the existence of a single paradigm that is valid in all situations or the point at which one paradigm's effect stops and the period of another begins while considering adult education paradigms. These paradigms give insight on the aims of present adult education and adult education organizations. As a result, adult education organizations and administrations are affected by the transformation of adult education within the framework of historical, cultural, global, social, political, and economic factors, in line with adult education philosophies and adult education paradigms. The current section of the study, in addition to adult education aims and paradigms, covers factors affecting adult education organizations and administration.

Caffarella and Merriam (1999) argue that integrative approaches to adult learning that address both the individual and the environment holistically have the potential to produce the most effective results. In the light of organizational theories, Schemmann and Bonn (2023) reveal that the structural characteristics of the organization, organizational fabric and organizational form mutually affect adult education organizations. No phenomenon in education alone has the power to change things. In addition, within the framework of the system approach, different variables at various levels mutually affect each other. Taking all of this into account, it can be stated that contingency approaches can be useful in adult education organizations and administration. In this context, within the framework of Kowalski's (1998) conceptualization, the factors affecting adult education organizations and administrations are addressed as *environment, program and learners, organization*, respectively.

Environmental factors affecting adult education organizations and administration are considered as society, state, laws, social needs, social demands, pressure groups and other actors (Kowalski, 1998). Environmental factors are not limited to these, but basically it can be said that even these phenomena can affect adult education organizations and administration. Besides, over time, the understanding that has evolved from the field of adult education to adult learning seems to have changed adult education paradigms, theories, goals, and practices in this direction (Usher, Bryant, and Johnston, 1997). Muders and Martin (2021) notify that the state, firms,

markets, and communities can offer adult education, and that the need for adult education in each context is different. For example, adult education administration shaped by the market includes entrepreneurship, competition, struggle for benefits, choice of educational services and freedom of independent decision-making (Avdagic, 2017). In this context, the demand for adult education is increasing because of the need for adults to continuously improve themselves in business life, increase their performance and contribute to workplace effectiveness (Jacobs, 2006). This situation reveals that adult education organizations and administration have evolved in line with market conditions. Although the current situation reveals an adult education shaped by market conditions, in the context of environment the ideals at the core of adult education still preserve their potential.

The factors affect adult education organizations and administrations related to program and learners are physical environment, teaching, learner motivation, learner access to the program, curriculum, and learner (Kowalski, 1998). As with environmental factors, factors related to curriculum and learners are not limited to those listed here, but these phenomena have the potential to influence adult education organizations and administration. When considered in the context of learners, it is a necessity that the methods of andragogy and other theories of adult learning are also considered here. In addition, Luke, Phinney, Clark, Kidd, and Kaplan (1959) examine the administration of adult education in public schools, libraries, cooperative extension services, voluntary organizations, and university extension programs. Although adult education is offered in each of these organizations, it is understood that the factors within the program and learners differ from each other.

The organization and administration of adult education can also vary according to who provides adult education, its legal basis, and its participants. Especially in the context of adult education programs, it is seen that the organization of them can take place in many ways and there are many factors that determine how these programs are organized. Considering that these factors are constantly changing, there is no single prescription for how programs should be organized (Biniecki and Schmidt, 2021). However, if who provides adult education is defined, other factors become clear. In this context, adult education can be offered by firms in the market, the state or non-profit stakeholders. Accordingly, adult education organizations may differ in their legal basis, financial structures, units offering adult education, individual participation and learning processes in adult education (Bernhardt and Kaufmann-Kuchta, 2023). This difference is closely linked to the educational understanding of the adult education organization, in other words, they are related to adult education aims and paradigms. The educational approaches of adult education organizations are structured

within the framework of individual development, increasing professional competencies and social integration. In this context, adult education can be viewed as a social endeavor that supports each person's individual development, a tool that increases the likelihood that excluded groups will be included in society, and a private service that aims to offer professional education in response to the demands of labor markets (Avdagic, 2017).

Organizational factors affecting adult education organizations and administration are organizational goals, legal regulations, policies, role expectations and resources (Kowalski, 1998). As with other factors, organizational factors are not limited to these, but these phenomena are important in adult education organizations and administration. For example, McClusky (1950) states that there are differences in adult education organizations at the national, state, local community, and local public-school levels in terms of objectives, legal regulations, and administrative responsibilities. That is, adult education aims and paradigms that result in variations in other aspects are likewise effective on organizational factors. However, there are similarities between general organizations and adult education organizations in administrative processes in the context of organizational factors. To see these similarities, in the present part of the study, administrative processes, administrators, and leadership in adult education organizations are discussed in more detail.

As in the administration of all organizations, there are administrative processes such as decision-making, planning, organizing, communication, coordination, and evaluation in the administration of educational organizations (Taymaz, 2011). Similarly, in educational organizations, as in all organizations, activities are conducted in all dimensions of the organization within the framework of purpose, structure, process, and climate (Bursalıoğlu, 2010). As a result, it is critical for administrators to understand basic organizational structural functions such as authority, division of labor, administrative tasks related to administrative processes, different perspectives on organizational administration such as power and organizational politics, leadership approaches, organizational performance measurement such as productivity, motivation, organizational climate and culture, and strategies to increase organizational effectiveness (Martin, 2017). Because all these things are required for organizations to achieve their objectives, provide effective management, and hence thrive.

Administration processes in adult education organizations take place in an equivalent way. In planning, priorities are defined and determined by considering the mission of the higher unit to which the adult education organization is affiliated. Strategies are determined to realize these priorities, in other words, the goals of the organization. In organizing, resources are arranged to achieve the predetermined goals of the organization.

In communication, plans are made by considering how the organization's mission will be conveyed to the organization's employees and stakeholders outside the organization. In coordination, the selection of personnel who will achieve the organization's goals, the determination of the roles and responsibilities of the personnel, and the stages to be followed for their training and development are determined. In evaluation, the stages of achievement of predetermined goals are monitored and the extent to which these goals are effectively achieved is reviewed (Merrill, 2017). As can be seen, administrative processes in general organizations and adult education organizations are similar. Although all individuals in the organization have responsibilities in the achievement of organizational goals, it is possible to say that administrators have a leading position in this process.

Administrators are responsible for determining the objectives and criteria and operating the policies and processes that will ensure the achievement of these objectives. In this context, administrators are responsible for developing plans and programs, motivating, and guiding employees of organization, creating records, preparing the budget, interacting with all stakeholders, and conducting audits to ensure that everything is working as intended (Camenson, 2008). In addition to these, establishing a shared organizational vision and a positive organizational climate under the direction of administrators, outlining organizational policies and procedures, empowering, and supporting employees will enhance organizational conditions, increase cooperation in the organization, and as a result the entire organization will benefit from it (Morello, 2017). Although the preceding information is applicable to all organizations, the goals, size, structure, physical and human resources, culture, and diversity of the organization can cause variations in the way the organization is formed as well as in its administration (Biniecki and Schmidt, 2021).

Graduates of administration-related fields in higher education programs know what they may encounter when they are employed in the public or private sector (Kowalski, 1998). However, when it comes to the administration of adult education organizations, these differences in terms of purpose, scope and service make the work of adult education administrators a bit difficult. Adult education administrators are expected to manage people, resources, and processes skillfully and successfully (Biniecki and Schmidt, 2021). This administrative task can be conducted by a single person, or it can be carried out by more than one person, with a different administrator involved in each administrative process depending on the size of the organization. In this context, although there are national differences, the administration of a school or adult education organization is conducted by the principal, assistant principal, central office administrators, academic deans, program coordinators, faculty or university department heads,

deans of students or student affairs (Camenson, 2008). In Turkey, school administrators (principals and assistant principals), administrators working in provinces and districts, rectors, deans, college directors, heads of departments, and coordinators can be considered as adult education administrators. Adult education administrators working at many diverse levels, and they may have different duties depending on the organization and level they work at. However, in the 21st century, where education is accepted as a tool to ensure personal, social, economic, and organizational development, it is particularly important and prioritized for administrators to ensure positive social change in society by empowering adults and closing the education gap (Muirhead, 2017).

The prominence of leadership approaches in the administration and educational administration literature has led to the study of the administration of adult education organizations within the framework of leadership (Fleming and Caffarella, 2000). It is argued that leadership, especially charismatic leadership, reveals effective results in adult education organizations (Ringer, 1969). However, the symbiotic relationship between leadership and administration is ignored in discussions of leadership in the administration of adult education organizations (Biniecki and Schmidt, 2021). In fact, the main characteristic of adult educators is leadership (Fleming and Caffarella, 2000). Besides, most of the developments in adult education have been realized thanks to innovative adult educators with leadership qualities (Ringer, 1969). In a similar vein, leadership skills are especially important in the administration of adult education organizations. However, there is also a stance against leadership in adult education due to its sensitivity to hierarchical and oppressive practices and democratic traditions (Fleming and Caffarella, 2000). As a result, although it is important to have administrators with leadership qualities and to employ leadership skills in the administration of adult education organizations, considering the ideals at the core of adult education and adult education organizations, it seems more appropriate to employ inclusive and situation-specific administrative approaches rather than leadership.

As a Conclusion

In this study, which aims to address adult education from an organizational and administrative perspective, adult education is first discussed in the context of definitions, historical development, and philosophical foundations. As a result, the required foundation for addressing adult education from the standpoints of organization and administration has been established. Then, evaluations on adult education organizations and administration were made within the framework of organization and administration literature. As a result, the following can be said: (1) It is not possible to address the adult, adult education, adult learning, the historical founda-

tions, and philosophical background of adult education in a single definition or in a single context. (2) As adult education cannot be addressed in a single context, it is difficult to define its organization and administration. (3) Adult education paradigms that emerge in relation to adult education philosophies and aims have the potential to influence the structuring and administration of adult education organizations. (4) Each of the factors that are effective in the structuring of adult education at the environmental level, organizational level, program and learner level are also effective on adult education organizations and administration. (5) At the environmental level, adult education aims and paradigms are also effective in the organization and administration of adult education. Besides, it is understood that adult education is managed in line with market needs as a result of globalization and neoliberal policies. Even though the current reality indicates that they are influenced by market conditions, the fundamental principles of adult education still have potential in the context of environment. (6) At the program and learner level, it is seen that the organization and administration of adult education varies depending on who provides adult education, and similarly, adult education aims and paradigms are also determinative at this level. (7) At the organizational level, it is understood that there are differences in organizational goals, legal regulations and roles of administrators depending on the adult education organization, while administrative processes are like general organizations. Considering all these, in the evaluations to be made in the context of adult education organizations and administration, the philosophical foundations and aims of adult education should be taken into consideration, all environmental, organizational, program or learner-related factors affecting adult education should be reviewed separately, situational examinations and recommendations should be made for each organization. In this context, since it is foreseen that single or multiple case studies on adult education organizations and administrations can provide in-depth information, it may be recommended to design studies that address adult education organizations and administrations in different contexts. To increase awareness on the subject and strengthen the scientific basis, courses on adult education, characteristics of adult learners and administration of adult education organizations can be added to undergraduate and graduate programs related to administration, as well as courses on organization and administration can be added to adult education graduate programs.

References

Avdagic, E. (2017). Management models in organizations for adult education. Institute for International Cooperation of the German Adult Education Association - DVV International (Country Office Bosnia and Herzegovina). Sarajevo: BMZ.

Bernhardt, A. C. & Kaufmann-Kuchta, K. (2023). Governance of publicly financed adult education in England and Spain – a comparison. *Adult Education Quarterly, 73*(3), 310-331. https://doi.org/10.1177/07417136221132779

Biniecki, S. M. & Schmidt, S. W. (2021). Organization and administration of adult and continuing education programs. In T. S. Rocco, M. C. Smith, R. C. Mizzi, L. R. Merriweather, & J. D. Hawley (Eds.), *Handbook of adult and continuing education* (pp. 119–127). Virginia: Stylus.

Bowl, M. (2017). *Adult education in neoliberal times, policies, philosophies, and professionalism*. Birmingham: Palgrave Macmillan.

Bursalıoğlu, Z. (2010). *Okul yönetiminde yeni yapı ve davranış* (On beşinci basım). Ankara: Pegem.

Caffarella, R. M. & Merriam, S. B. (1999). Perspectives on adult learning: Framing our research. Adult Education Research Conference. https://newprairiepress.org/aerc/1999/papers/10

Camenson, B. (2008). *Opportunities in adult education careers* (Revised edition). New York: Mc Graw Hill.

Collins, R. (2021). Interdisciplinarity in adult and continuing education. In T. S. Rocco, M. C. Smith, R. C. Mizzi, L. R. Merriweather, & J. D. Hawley (Eds.), *Handbook of adult and continuing education* (pp. 31–37). Virgina: Stylus.

Demir, N. K. (2020). The need of adult education and training administration in lifelong learning. *Mediterranean Journal of Social & Behavioral Research, 4*(3), 41-45. https://doi.org/10.30935/mjosbr/9600

Duman, A. (2003). Bazı eğitim bilimi kavramlarına ilişkin genel bir değerlendirme. *Muğla Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 10*, 1-13. https://dergipark.org.tr/tr/pub/musbed/issue/23504/250420

Duman, A. (2007). *Yetişkinler eğitimi*. Ankara: Ütopya.

Fleming, J. A. & Caffarella, R. S. (2000). Leadership for adult and continuing education. Adult Education Research Conference, Vancouver, Canada. https://newprairiepress.org/aerc/2000/papers/24

Foley, G. (2004). Introduction: The state of adult education and learning. In G. Foley (Ed.), *Dimensions of adult learning, adult education, and training in a global era* (pp.3-18). Berkshire: Open University Press.

Hunt, C. (2005). Adult. In L. M. English (Ed.) *International encyclopedia of adult education* (pp.33-36). New York: Palgrave Macmillan.

Jacobs, R. L. (2006). Perspectives on adult education, human resource development, and the emergence of workforce development. *New Horizons in Adult Education and Human Resource Development, 20*(1), 21-31. https://doi.org/10.1002/nha3.20049

Jarvis, P. (1993). *Adult education and the state, towards a politics of adult education*. London: Routledge.

Jarvis, P. (2001a). (Ed.). *Twentieth century thinkers in adult and continuing education*. London: Kogan Page.

Jarvis, P. (2001b). Introduction: Adult education – an ideal for modernity? In P. Jarvis (Ed). *Twentieth century thinkers in adult and continuing education* (pp.1-12). London: Kogan Page.

Jarvis, P. & Wilson, A. L. (2005). *International dictionary of adult and continuing education.* Taylor & Francis e-Library.

Iliman Püsküllüoğlu, E. (2023). Lifelong learning and adult education: A political economy perspective. In *Advances in Education Sciences*. Ankara: Platanus Publishing. (In press.).

Knowles, M. S. (1980). *The modern practice of adult education, from pedagogy to andragogy*. New York: Cambridge.

Knowles, M. S., Holton III, E. F. & Swanson, R. A. (2005). *The adult learner* (Sixth edition). California: Elsevier.

Kowalski, T. J. (1998). The organization and planning of adult education. *Educational Leadership Faculty Publications, 61,* 3-12. http://ecommons.udayton.edu/eda_fac_pub/61

Luke, R. A., Phinney, E., Clark, R. C., Kidd, J. R. & Kaplan, A. (1959). The organization and administration of adult education. *Review of Educational Research, 29*(3), 269-279. DOI: 10.3102/00346543029003269

McClusky, H. Y. (1950). The organization and administration of adult education. *Review of Educational Research, 20*(3), 224-229. https://doi.org/10.3102/00346543020003224

Merrill, H. S. (2017). Administrative functions and structure for adult and continuing education. In L. G. Martin, S. C. Conceiçao & A. B. Knox (Eds.) *Mapping the field of adult and continuing education, an international compendium, volume three: Leadership and administration*, (pp. 347-350). Virginia: Stylus.

Merriam, S. B. (2005). Adult learning. In L. M. English (Ed.) *International encyclopedia of adult education* (pp.42-48). New York: Palgrave Macmillan.

Merriam, S. B. (2010). Andragogy. In K. Rubenson (Ed.) *Adult learning and education* (pp. 29-34). Oxford: Elsevier.

Merriam, S. B. & Brockett, R. G. (1997). The profession and practice of adult education, an introduction. San Francisco: John Wiley & Sons, Inc.

Martin, L. G. (2017). Introduction to volume three. In L. G. Martin, S. C. Conceiçao & A. B. Knox (Eds.) *Mapping the field of adult and continuing education, an international compendium, volume three: Leadership and administration*, (pp. 337-339). Virginia: Stylus.

Morello, C. (2017). Creating positive environments for adult and continuing education programs. In L. G. Martin, S. C. Conceiçao & A. B. Knox (Eds.) *Mapping the field of adult and continuing education, an international compendium, volume three: Leadership and administration*, (pp. 393-396). Virginia: Stylus.

Muders, S. & Martin, A. (2021). Task of leadership for intercultural opening strategies in organizations in adult and continuing education. *Leadership, Education, Personality: An Interdisciplinary Journal, 3,* 87-100. https://doi.org/10.1365/s42681-021-00027-4

Muirhead, M. (2017). The challenges of adult and continuing education leadership in the twenty-first century. In L. G. Martin, S. C. Conceiçao & A. B. Knox (Eds.) *Mapping the field of adult and continuing education, an international compendium, volume three: Leadership and administration*, (pp. 427-429). Virginia: Stylus.

Paterson, R. W. K. (2010). *Values, education, and the adult*. New York: Routledge.

Popović, K. & Reischmann, J. (2017). Androgogik, andragogy, and administering graduate programs. In L. G. Martin, S. C. Conceiçao & A. B. Knox (Eds.) *Mapping the field of adult and continuing education, an international compendium, volume three: Leadership and administration*, (pp. 343-346). Virginia: Stylus.

Ringer, W. B. (1969, February). Bureaucratic character of adult education organizations and innovativeness in program development. Paper presented at the American Educational Research Association, Los Angeles, California.

Rubenson, K. (2010). The field of adult education: An overview. In K. Rubenson (Ed.) *Adult learning and education* (pp. 3-13). Oxford: Elsevier.

Schemmann, M. & Bonn, E. (2023). Researching (multiple) coordination of action in adult education organizations -Theoretical approaches, empirical findings, and future perspectives. *Zeitschrift für Weiterbildungsforschung – Report,* 46, 9-23. https://doi.org/10.1007/s40955-023-00245-x

Scott, L., Mizzi, R. C. & Merriweather, L. R. (2021). Philosophical foundations of adult and continuing education. In T. S. Rocco, M. C. Smith, R. C. Mizzi, L. R. Merriweather, & J. D. Hawley (Eds.), *Handbook of adult and continuing education* (pp. 11–21). Virginia: Stylus.

Shizha, E. & Abdi, A. A. (2009). Globalization and adult education in the South. In A. A. Abdi & D. Kapoor (Eds.) *Global perspectives on adult education*. New York: Palgrave, Macmillan.

Taymaz, H. (2011). *Okul yönetimi* (10. baskı). Ankara: Pegem.

Tight, M. (2002). *Key concepts in adult education and training* (Second edition). Taylor & Francis e-Library.

Torres, C. A. (2013). *Political sociology of adult education*. Rotterdam: Sense Publishing.

Usher, R., Bryant, I. & Johnston, R. (1997). *Adult education and the postmodern challenge, learning beyond the limits*. London: Routledge Falmer.

United Nations Educational, Scientific and Cultural Organization, [UNESCO]. (2020). Literacy. Retrieved on 05.09.2023 from https://uis.unesco.org/en/topic/literacy

Yıldız, A. (2021). Modern yetişkin eğitiminin Batı'daki gelişimi. In M. Uysal, A. Yıldız, Ş. E. Bağcı & N. Korkmaz (Hazırlayanlar), *Fevziye Sayılan'a Armağan*, (pp. 23-50). Ankara: Ankara Üniversitesi Basımevi.

CHAPTER 6

5TH GRADE LEARNING DEFICIENCIES ABOUT FRACTIONS INVESTIGATION USING THE RESEARCHER TEACHER METHOD

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INVESTIGATION OF 5TH GRADE LEARNING DEFICIENCIES ON FRACTIONS USING THE RESEARCH TEACHER METHOD

ENTRANCE

The aim of mathematics education is for all students to learn at the highest level. However, although a few achieve this, it is seen as a fact of life that the majority have difficulty in mathematics (Tall and Razali, 1993: 209). If a student has difficulty in a subject, that difficulty must be identified and resolved (Duval, 2002: 14). Because the principle of pre-requisite is at the forefront in mathematics, if a student has difficulty in a subject, it becomes difficult for him to learn the following subjects. Lack of learning in a particular subject not only brings failure in that subject, but also opens the door to negativities. While students without learning deficits learn subsequent subjects more easily, students with learning deficits need more time and effort while learning the subject (Köse, 2007).

Mathematics learning disability is expressed as a type of mathematical disability that occurs with problems in acquiring the concept of numbers, memorizing arithmetic facts, making accurate and fluent calculations and mathematical reasoning. Although mathematics learning difficulties are not supported by definitive data, they are very common in the world and each country has different rates of mathematics learning difficulties.

It is of vital importance to diagnose students with mathematics learning difficulties at an early stage so that they can benefit from effective instructional interventions and are academically supported in the mathematics learning and teaching process (Geary, 2011; Passolunghi & Lanfranchi, 2012). Learning disabilities occur when the child is at an early age, but it is usually possible to realize this when the child starts school (Akın & Özmen, 2019). During the early diagnosis process, some symptoms observed in students can play a guiding role. Students with learning disabilities have different characteristics from their normally developing peers, but they also differ from their peers diagnosed with learning disabilities (Güzel-Özmen, 2015).

Students diagnosed with mathematics learning disabilities have difficulty with numbers and mathematical calculations (Öz, 2019), do not answer questions early and are slower than their peers, have difficulty in mental calculations and are not proficient in using mathematical language (Cowan & Powell, 2014; Butterworth, 2005). Additionally, these students may have difficulty in measuring, telling time, calculating money, sorting, and performing mental operations.

One of the most difficult topics in mathematics for teachers and students is the subject of fractions. Every year, students learn the addition, subtrac-

tion, multiplication and division of fractions, but they always forget them and cannot remember how to do them. One of the reasons why students have difficulty with fractions is that they memorize the formulas instead of understanding the subject. Another reason is that they perceive the numerators and denominators of fractions as two different integers (Şiap & Duru, 2004).

The difficulties that students face in learning mathematics, along with arithmetic and geometry, are exacerbated by the initial introduction to algebra. After natural numbers are taught in primary education, fractions are taught. At this point, the teacher has teaching difficulties and the student has learning difficulties. Students who encounter these difficulties and difficulties during their primary education years may have a negative impact on their later learning and academic success. In addition, this situation also negatively affects their emotional development. Starting from primary school periods and including the following periods, learning difficulties encountered by students, especially in the field of science and mathematics, should be controlled and learning difficulties should be eliminated, and measures should be taken to prevent these situations (Ersoy & Erbaş, 2005).

There has been a lot of research on the difficulties encountered when teaching fractions. Some studies on this subject have shown that students have difficulty understanding the division into equal parts in the definition of a fraction (Haser and Ubuz, 2001), have difficulty understanding the basic concepts of fractions at all levels (Aksu, 1997), have difficulty in solving problems about fractions and make mistakes (Başgün and Ersoy, 2001) has been reported.

In primary schools, students are taught three different meanings of the concept of fraction: part-whole, section and ratio. Teaching the concept of fractions starts with the part-whole relationship because it is easier (Reys, Suydam, Lindquist, & Smith, 1998).

Students in the first stage of primary education have some well-established ideas about the meaning of ordering, addition, subtraction, multiplication of fractions and problems related to fractions, even if they have not studied these subjects, since they encounter these concepts informally. If teachers explore these ideas and take them into account when teaching, they can be more sensitive and effective.

Purpose of the research

The aim of this research is to understand 5th grade students' knowledge of fractions.

1. M.5.1.3.4. *Understands that simplifying and expanding will not change the value of a fraction and creates fractions that are equivalent to a fraction.*

2. ***M.5.1.3.5.*** *Lists fractions with equal numerators or denominators.*

3. ***M.5.1.3.6*** *. It calculates the desired simple fraction of a quantity and the entire quantity given the simple fraction by using unit fractions.*

The aim of the study is to examine the learning deficiencies and learning difficulties they experience regarding their achievements and to make some suggestions to eliminate these learning deficiencies and learning difficulties.

METHOD

Pattern of the Research

In this study, the teacher researcher method was used. Researcher Teacher method; It is defined as a form of research (RPM) in which teachers are recommended to conduct research on the problems of education and training in school and classroom environments. This model is not a method or technique for the teacher to investigate problems, but an approach that has proven to be very convenient for teachers. Because the basis of this approach is based on the principle of identifying and solving the problems that the practitioner encounters in practice. In short, the practitioner, that is, the teacher, is a researcher (Durmuş & Yiğit, 2012). This method is also defined as a teacher realizing the problem of not progressing in the expected success graph in the educational process, conducting a research by adopting a scientific approach to solve this problem, and sharing the results obtained with other colleagues (Cohen and Manion, 1994).

The reason for conducting this research is that the researcher observed that his students had a lot of difficulty with fractions in mathematics lessons.

Study Group

In this study, the sample was selected from a total of 14 5th grade students, 7 female students and 7 male students, studying in a secondary school in Gürpınar district of Van, according to the purposeful sampling method and easily accessible sampling technique. Purposive sampling method; It is a sampling method that allows in-depth investigation of situations that are thought to have rich information . In the easily accessible sampling technique, one of the purposeful sampling types, the researcher chooses a situation that is close to him/her and easy to access, adding speed and practicality to the research. Generally, easily accessible case sampling is preferred when it is not possible to use other sampling types. Easily accessible samples are generally less costly, and a familiar sample is more practical for researchers. However, the generalizability and reliability of the research results are less in this sampling method compared to other

sampling methods (Yıldırım and Şimşek, 2011). Since the subject of fractions is also taught in the 5th grade according to the curriculum, care was taken to select the study group from this grade level. The study group was selected from the students who were taught by the researcher teacher. In this way, the researcher makes more observations and has the chance to be personally involved in the research.

Data Collection Tools

In this study, the researcher has the role of teacher, observer and researcher. For this reason, the observations and experiences obtained by the teacher were used as data collection tools. Additionally, a worksheet about fractions was prepared as a data collection tool and administered to the students. Since the researcher collects data as a result of observations from his own lessons, its validity is ensured.

Analysis of Data

The answers given to the activity sheets directed to the students and their solutions were carefully examined, and the analysis of this study was considered as a descriptive analysis, since the data of the achievements discussed within the scope of the study were analyzed separately in the findings section. The aim of descriptive analysis is to present the findings to the reader in an organized and interpreted form (Yıldırım and Şimşek, 2006). Within the framework of ethical rules, the names of the students are coded as E1, E2, E3,... for male students and K1, K2, K3,... for female students.

RESULTS

In this section, the findings obtained from the analysis of the data obtained in the research will be presented. In this research, about fractions;

1. ***M.5.1.3.4*** *. Understands that simplifying and expanding will not change the value of a fraction and creates fractions that are equivalent to a fraction.*
2. ***M.5.1.3.5.*** *Lists fractions with equal numerators or denominators.*
3. ***M.5.1.3.6.*** *It calculates the desired simple fraction of a quantity and the entire quantity given the simple fraction by using unit fractions.*

Learning deficiencies related to 3 different achievements will be determined. These 3 gains were analyzed separately.

1) " M.5.1.3.4. Understands that simplifying and expanding will not change the value of a fraction and creates fractions that are equivalent to a fraction. "Findings regarding the acquisition of

The results of the first question asked to the students in the activity sheet are given in Table 1.

Table 1. Status distribution of answers to question 1

Response situations	All TRUE	Some TRUE	All wrong	All empty
Number of Students	3	6	4	one

According to this table, 4 students *are M.5.1.3.4.* He answered all the questions about his achievement incorrectly. 6 students answered some of the questions correctly, 3 students answered all of them correctly, and 1 student left them all blank.

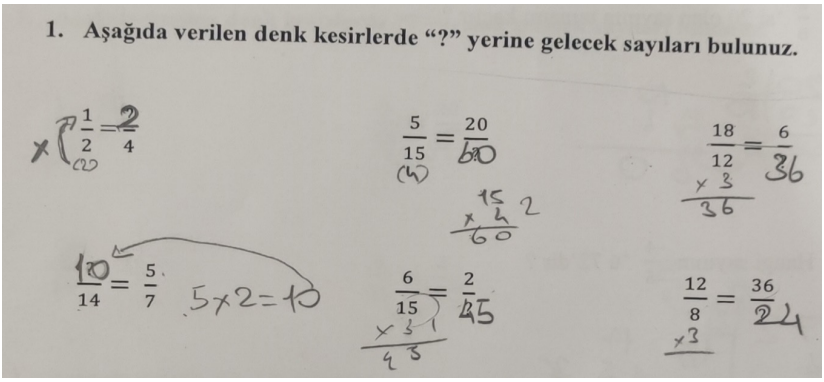

Figure 1. K7 student's answers to Question 1

As shown in Figure 1, the K7 student always expanded the fraction when operating equivalent fractions, regardless of whether the fraction was simplified or expanded. For example, instead of dividing 12 by 3 in the denominator, he multiplied it by 3. Likewise, instead of dividing 15 by 3, he multiplied it by 3 again. This student has deficiencies in expanding and simplifying equivalent fractions.

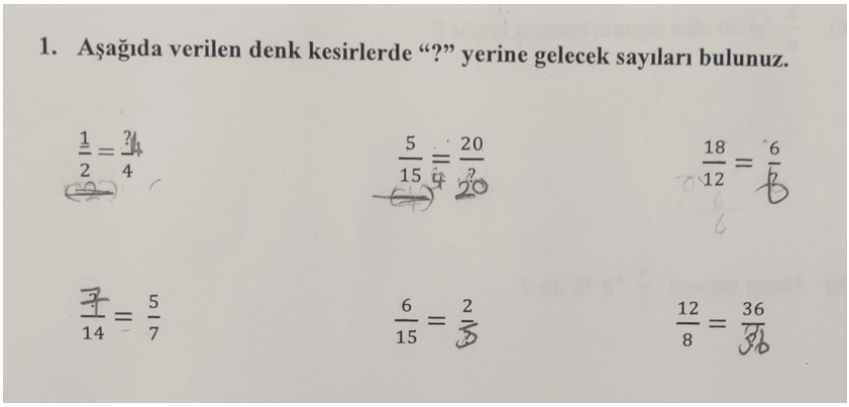

Figure 2. K1 student's answers to Question 1

As shown in Figure 2, K1 student thought that the numerator and denominator were equal throughout his answers.

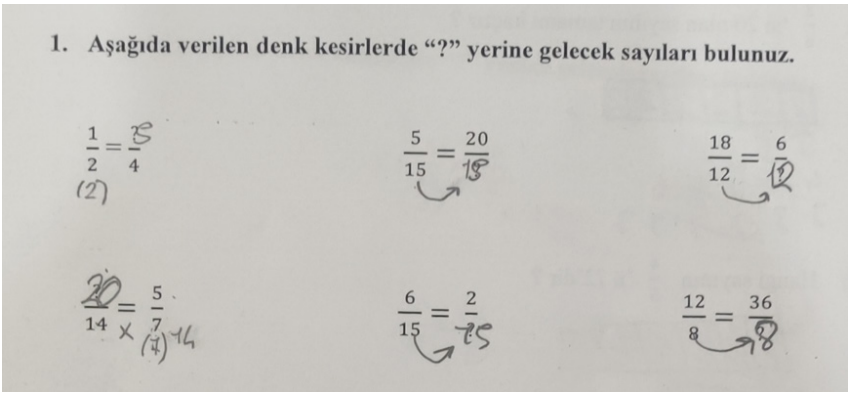

Figure 3. E1 student's answers to Question 1

E1 student generally thought that the denominators in all equivalent fractions were equal, regardless of the numerator part. But he thought about this only for the denominator, not for the numerator. Because in two examples, the numerator parts were left blank, but the student did not write the number in the numerator of the equivalent fraction. In other words, he thought of this situation only for the denominator.

2) "M.5.1.3.5. Lists fractions whose numerators or denominators are equal." findings regarding achievement

The results of the second question asked to the students in the activity sheet are given in the table below.

Table 2. Status distribution of answers to question 2

Response situations	All TRUE	Some TRUE	All wrong	All empty
Number of Students	4	8	2	0

As Question 2, two sub-questions were asked. One of them was given fractions with equal denominators and they were asked to list them from largest to smallest. The second one was given fractions with equal numerators and asked to list them from largest to smallest.

Two of the students answered both of these incorrectly. Predominantly, eight students answered one of these questions but could not answer the other. Four students answered all of these correctly. It was observed that the student had difficulty, especially when listing fractions with equal numerators. It was also understood in the course attended by the researcher, that is, the teacher, that the students had a little more difficulty in ordering fractions with equal numerators than in ordering fractions with equal denominators.

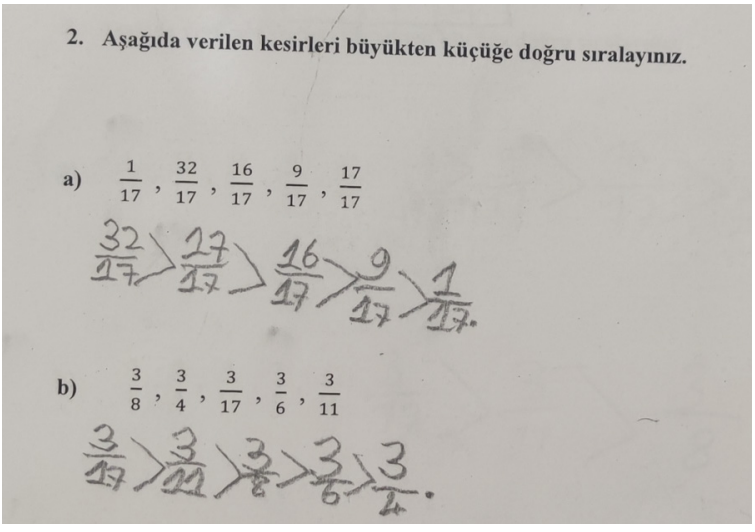

Figure 4. E3 student's answers to Question 2

When the answers given by the E3 student were examined, he did not have difficulty in ordering the fractions with equal denominators, and when listing the fractions with equal numerators, he thought that the fraction with the larger denominator was larger. 5 students made the same mistake in this question. While they correctly listed the fractions with equal denominators, they could not correctly order the fractions with equal numerators. These students have a lack of learning in this regard.

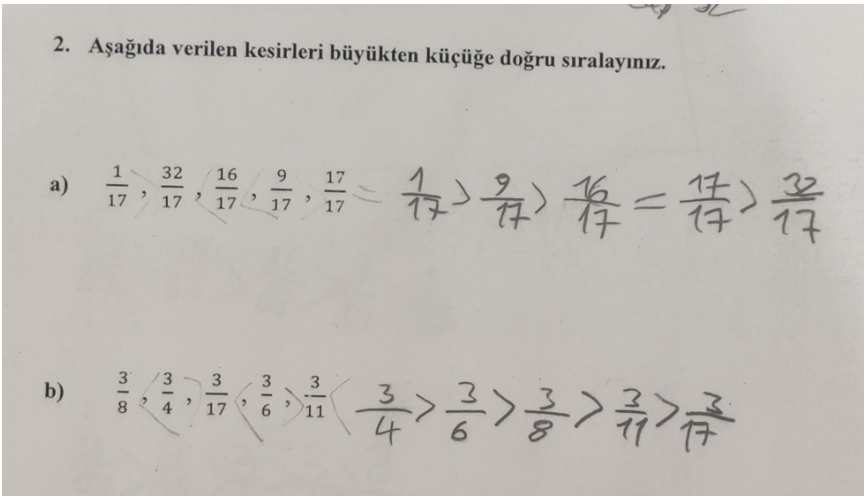

Figure 5. E2 student's answers to Question 2

When the answers of the E2 student given in Figure 5 are examined, it is seen that while he correctly listed the fractions with equal numerators, he could not correctly order the fractions with equal denominators. There are 3 students who made this mistake. These students have learning deficiencies in this regard.

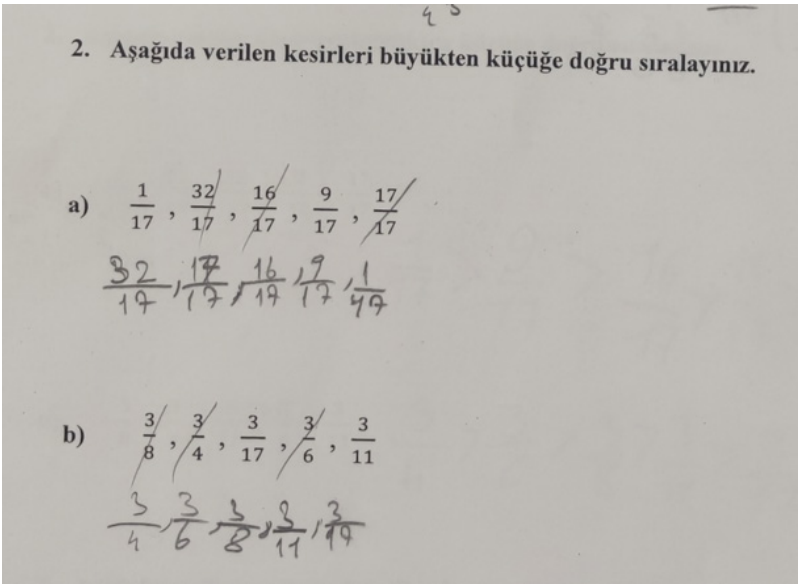

Figure 6. K7 student's answers to Question 2

Figure 6 shows the answers given by the K7 student. The K7 student correctly listed both fractions with equal denominators and fractions with equal numerators, but did not use the "greater than" sign. The K6 student also listed the items correctly and did not use the "greater than" sign.

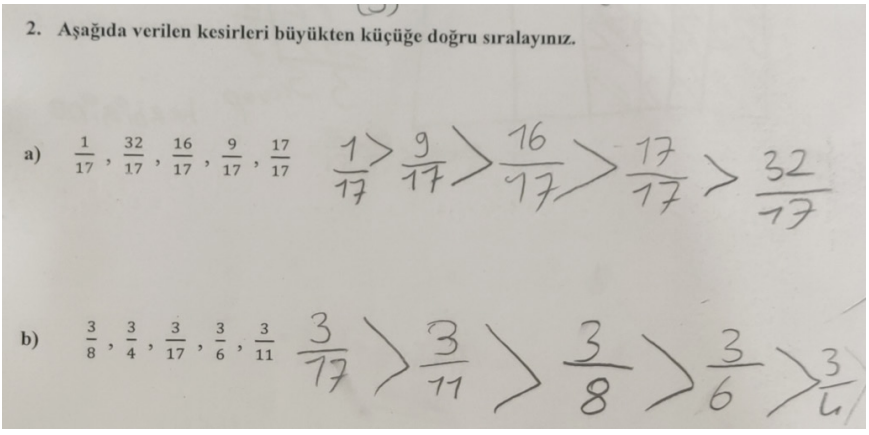

Figure 7. E4 student's answers to Question 2

When the answers of the E4 student given in Figure 7 are examined, he made a mistake both in ordering fractions with equal numerators and in ordering fractions with equal denominators. A K5 student also made this mistake. A total of two students made this mistake.

3) "M.5.1.3.6. It calculates the desired simple fraction of a quantity and the entire quantity given the simple fraction by using unit fractions. Findings regarding the acquisition of "

The results of the 3rd and 4th questions asked to the students in the activity sheet are given in the table below.

Table 3. Status distribution of answers to questions 3 and 4

Response situations	All TRUE	Some TRUE	All wrong	All empty
Number of Students	4	7	3	0

The 3rd question was asked to find the desired simple fraction of a quantity, and the 4th question was asked to find the entire quantity of a quantity given the simple fraction. When the answers given were examined, 4 students answered all of them correctly, 7 students answered some of them correctly, and 3 students answered all of them incorrectly.

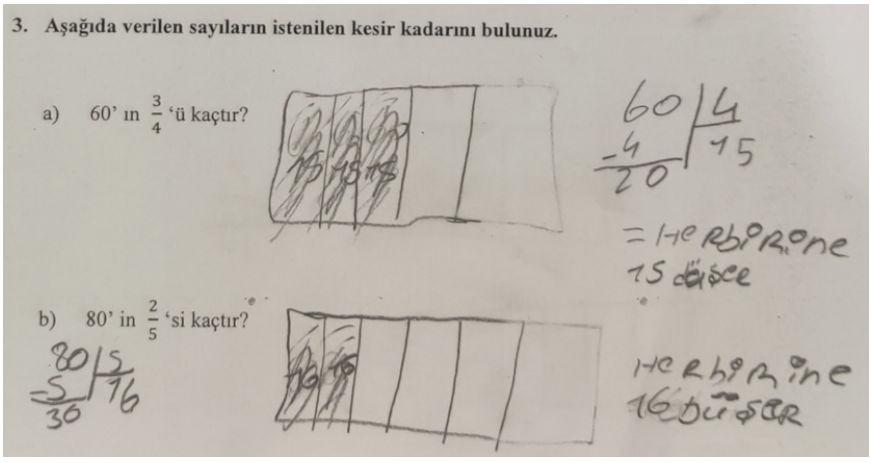

Figure 8. E4 student's answers to Question 3

Figure 8 shows E4 student's answers to Question 3. Using modeling, the E4 student found and showed each of the 4 equal parts of the number 60, but could not write how many 3 of the 4 equal parts were. Likewise, he found each of the 5 equal parts of the number 80 by using modeling,

but he could not write down how many 2 of the 5 equal parts were. This deficiency was observed in three students in total.

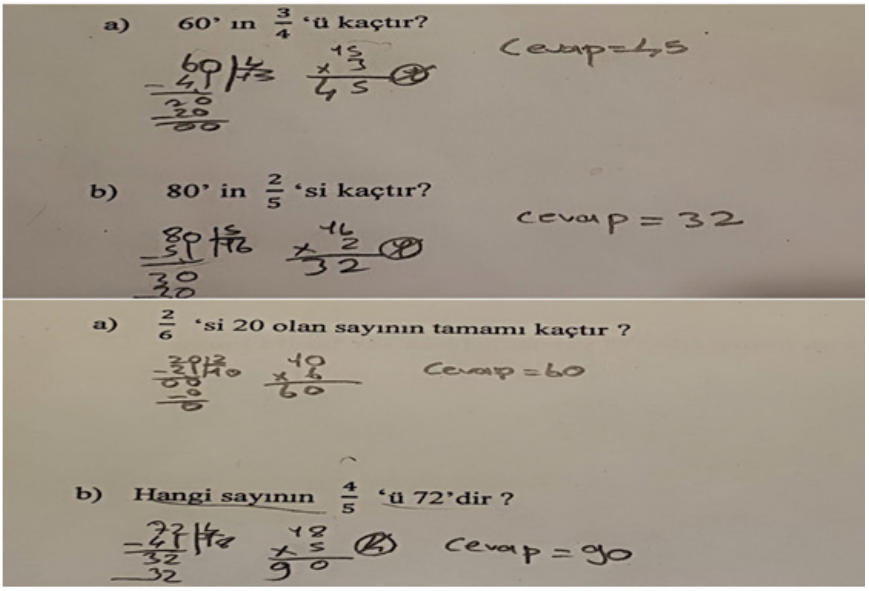

Figure 9. K6 student's answers to questions 3 and 4

When the answers given by the K6 student are examined in Figure 9, he found both the desired simple fraction of a quantity and the entire number of a given number as the simple fraction. The student answered both questions correctly. While most of the students answered such questions using modelling, two students answered them entirely using operations, without using modelling.

As a result of the researcher's, that is, the teacher's, observations in the classroom, it was seen that the students did not solve enough questions and therefore did not gain practice. For this reason, it has been observed that the majority of students still try to solve the questions using modeling after learning the subject. This has been observed to have a negative impact on their economic use of time.

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

The data obtained as a result of the research are given in the findings section. In this section, the data given in the findings section will be interpreted and a conclusion will be drawn. Later, some suggestions will be made.

As a result of the data obtained, it was understood from both the collected data and the researcher teacher's observations throughout the process that the students had learning deficiencies in creating equivalent fractions and that they had difficulty in learning. While some students did not have difficulty in creating equivalent fractions, some students could not distinguish whether the fraction needed to be expanded or simplified, so they had difficulty in creating equivalent fractions. As a result of the observation made during the teaching of fractions, it was seen that some students made incomplete or incorrect expansion and simplification when creating equivalent fractions. While he should have multiplied or divided both the numerator and denominator by a natural number, he multiplied or divided only the numerator or only the denominator.

Most of the students made mistakes when ordering fractions. While listing fractions with equal numerators or fractions with equal denominators, more than half of the students got one of them right and the other wrong. However, while students mostly sorted the fractions with equal denominators correctly, they sorted the fractions with equal numerators incorrectly. A small number of students confused the rules and generalizations used in ordering fractions. In other words, when listing fractions with equal numerators, he made a mistake by thinking that the fraction with a larger denominator was larger, or when listing fractions with equal denominators, he thought that the fraction with a smaller numerator was larger. Therefore, it was observed that students had learning difficulties and learning deficiencies when ordering fractions.

While trying to find the desired simple fraction of a quantity or trying to find the entire quantity given as a simple fraction, students mostly tried to find it by using modeling. Using modeling had a positive effect on them reaching the answer, but it had a negative effect in terms of economical use of time. It was understood from the observations of the researcher teacher that students who were active in the course and gained practice were able to reach results directly and quickly without the need for modeling after a certain period of time. During the process, it was observed that while students did not have much difficulty in finding the simple fraction of a quantity, they had difficulty in finding the entire quantity given as a simple fraction.

It is recommended to give examples from daily life in teaching fractions, to support them with educational games to make mathematics lessons enjoyable, to make students active in the lesson, to provide students with plenty of exercises after teaching the subject of fractions, to help students gain practicality, and for teachers to improve themselves in their own fields and learn and apply new methods and techniques. Thus, it is thought that learning deficiencies and learning difficulties in mathematics and teaching the subject of fractions will be reduced to a minimum level.

REFERENCES

Akın, Ş. A., & Özmen, E. R. (2019). Öğrenme güçlüğünün tanılanması ve karşılaşılan sorunlar. In E. R. Özmen, & A. Ataman, *Öğrenme güçlüğü ve özel yetenek [Learning disability and special ability]* (pp. 1-24). Maya Akademi.

Aksu, M. (1997). Student performance in dealing with fractions. *The Journal of Educational Research, 90*(6), 375-380.

Başgün, M., & Ersoy, Y. (2000). Sayılar ve Aritmatik I: Kesir ve Ondalık Sayıların Öğretilmesinde Bazı Güçlükler ve Yanılgılar. *IV. Fen Bilimleri Eğitimi Kongresi Bildiri Kitabı* (pp. 604-608). Ankara: MEB Yay.

Butterworth, B. (2005). The development of arithmetical abilities. *Journal of Child Psychology and Psychiatry, 46*(1), 3-18.

Cohen, L., & Manion, L. (1994). *Research Methods in Education (4th ed.).* London: Routledge Press.

Cowan, R., & Powell, D. (2014). The contributions of domain-general and numerical factors to third-grade arithmetic skills and mathematical learning disability. *Journal of Educaitonal Psychology, 106*(1), 214-229.

Durmuş, E., & Yiğit, N. (2012). Öğretmen Adaylarının Eğitim Araştırmalarının Amaç ve Çeşitleri Hakkındaki Görüşlerinin İncelenmesi. *Sakarya Üniversitesi Eğitim Fakültesi Dergisi, 23*(23), 3-20.

Duval, R. (2002). The cognitive analysis of problems of comprehension in the learning of mathematics. *Mediterranean Journal for Research in Mathematics Education, 1*(2), 1-16.

Ersoy, Y., & Erbaş, K. (2005). Kassel Projesi Cebir Testinde Bir Grup Türk Öğrencinin Genel Başarısı ve Öğrenme Güçlükleri. *İlköğretim-Online, 4*(1), 18-39.

Geary, D. C. (2011). Cognitive predictors of achievement growth in mathematics: A 5-year longitudinal study. Developmental Psychology. *47*(6), 1539-1552.

Güzel-Özmen, R. (2005). Öğrenme güçlüğü olan öğrenciler. In İ. H. Diken, *Özel eğitime gereksinimi olan öğrenciler ve özel eğitim [Students with special education needs and special education]* (pp. 335-361). Pegem Akademi Yayıncılık.

Haser, Ç., & Ubuz, B. (2001). İlköğretim 5.sınıf Öğrencilerinin Kesirler Konusunda Kavramsal Anlama ve İşlem Yapma Performansı. *IV. Fen Bilimleri Eğitimi Kongresi* (pp. 609-612). Ankara: MEB Yay.

Köse, S. (2007). *İlköğretim altıncı sınıf matematik dersi ölçüler ünitesinde öğrenme eksiklikleri tamamlanarak yapılan öğretimin öğrenci başarısına etkisi.* Konya: Selçuk Üniversitesi.

Öz, A. Ş. (2019). Bir özel eğitim kategorisi olarak öğrenme güçlükleri. In E. R. Özmen, & A. Ataman, *Öğrenme güçlüğü ve özel yetenek [Learning disability and special ability]* (pp. 1-24). Maya Akademi.

Passolunghi, M. C., & Lanfranchi, S. (2012). Domain-specific and domain-general precursors of mathematical achievement: A longitudinal study from kindergarten to first grade. *British Journal of Educational Psychology, 82*(1), 42-63.

Reys, R. E., Suydam, M. N., Lindquist, M. M., & Smith, N. L. (1998). *Helping Children Learn Mathematics.* Boston: Allyn and Bacon.

Şiap, İ., & Duru, A. (2004). Kesirlerde Geometriksel Modelleri Kullanabilme Becerisi. *Gazi Üniversitesi Kastamonu Eğitim Dergisi, 12*(1), 89-96.

Tall, D. O., & Razali, M. R. (1993). Diagnosing students' difficulties in learning mathematics. *International Journal of Mathematical Education in Science and Technology, 24*(2), 209-222.

Yıldırım, A., & Şimşek, H. (2006). *Sosyal Bilimlerde Nitel Araştırma Yöntemleri* (5. ed.). Ankara: Seçkin Yayıncılık.

Yıldırım, A., & Şimşek, H. (2011). *Sosyal bilimlerde nitel araştırma yöntemleri* (8. ed.). Ankara: Seçkin Yayıncılık.

CHAPTER 7

IMPACT OF POVERTY AND PARENTAL INVOLVEMENT DURING TRANSITION TO ELEMENTARY SCHOOL

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Introduction

Using multilevel models of data from the Early Childhood Longitudinal Study- Kindergarten Cohort (ECLS-K), conducted on 20,356 kindergarten students, the researchers discovered that parental involvement in children's education mediated to some extent the relationship between family poverty and children's mathematics and reading achievement in kindergarten. This outcome might display differences across racial/ethnic communities. In Asian families, poor and non-poor children achieved similar levels of academic performance. Poverty was not associated with participation of children from Black families in organized activities. However, the Black children's participation in organized activities was not linked to their academic achievement. Parents' home learning activities predicted children's reading performance only in Hispanic families. The findings rendered support for the application of the family process model to educational outcomes during children's the transition to primary school.

A vast body of literature confirmed the negative impacts of poverty on early education. Poor children were more prone to receive lower grades and test scores in primary school, and were more likely to be placed in special education and fail classes compared their wealthier peers (Blair & Scott, 2002; Lee & Burkam, 2002; Raver, Gershoff, & Aber, 2007; Yeung, Linver & Brooks-Gunn, 2002). Taking into account the long-term importance of early education (Pianta et al., 2007), the differences, inequalities and gaps in academic achievement between children from poor and non-poor families at the beginning of school had particular implications for educational life and academic trajectories. The differences in academic achievement, inequalities and gap observed between children from poor and non-poor families could prevent young people born into and living in poor families from potentially obtaining educational documents and sustain the intergenerational cycle of poverty or the passage of poverty from one generation to the next (Mayer, 1997; McLoyd, 1998; Oreoopoulos, Page, & Stevens, 2006). Thus, social science researchers continued their research aimed at understanding and explaining how poverty influenced early education and what its greatest risk was.

By applying developmental theory to nationally-representative data, the present research was designed to address, understand and explain how poverty influenced early education and what was at greatest risk. The research particularly focused on the theoretical perspective of human development and the family process model (Elder, 1999; McLoyd, 1998) to explore the transition to school. Utilizing data from the Early Childhood Longitudinal Study-Kindergarten Cohort (ECLS-K), the study examined whether education-related family processes mediated the association between family poverty and children's kindergarten success. Demographic variables, as well as

a wide variety of student, grade-level and school-level control variables were included in the study to understand and identify the a wide array of factors associated with poverty and children's kindergarten success.

The study aimed to contribute to research and policies on the early education of children from poor families. The family process model was applied to children's transition to primary school based on remarkable and noteworthy educational data. The research sought to bridge the gap between family science and early education research, and to help identify educational policies that can serve and deliver benefits to a better understanding of family-school connections. This study evaluated the generalizability of the family process model by exploring children's school life and addressed the most potentially effective goals of educational policies.

Impact of Poverty on Child Development and the Family Process Model

There has been an increase in poverty and inequalities between SES strata or social classes. For instance, 17% of children lived in families below the annual official poverty status of $20,614 for a family of four in the United States (U.S. Census Bureau, 2007). Compared to any other specific industrialized society, there are more children born into and living in poverty today that there were 30 years ago (Children's Defense Fund, 2004). Children are more likely than adolescents or adults to be exposed to and experience poverty (Arnold & Doctoroff, 2003). Although poverty transcends racial/ethnic boundaries, children from racial minority groups were more often born into and lived in poor families compared to White children (U.S. Census Bureau, 2007).

Research revealed that children from poor families were at risk for physical, cognitive, and socio-emotional problems that persisted for generations (Collins, David, Prachand & Pierce, 2003; Emanuel, Filakti, Alberman & Evans, 1992; Oreopoulos et al., 2006) (McLoyd, 1998; Seccombe, 2000). Even at the beginning of school, the differences, inequalities and gaps in academic achievement between children from poor and non-poor families appeared evident and were clearly displayed. Children from poor families received significantly lower scores on mathematics and reading tests at the beginning of kindergarten compared to children from middle- and upper-class families (Lee & Burkam, 2002; Raver et al., 2007). It was expressed that this problem also existed particularly for children in racial minority groups (Duncan & Magnuson, 2005).

It was argued that some of the clearly-proven and well-documented impacts of poverty on children's cognitive development emerged through family processes such as marriage and parent-child relationships and in-

teractions (Conger et al., 1992; Gutman & Eccles, 1999; McLoyd, 1998; Mistry, Vandewater, Huston & McLoyd, 2002; Yeung et al., 2002). A model based on environmental and life process theories was proposed to explain the role of family dynamics in the socio-emotional development of children within the impacts of poverty and economic hardship (McLoyd, 1990). According to this model, psychological distress related to poverty could understandably reduce the capacity and power of positive socialization and child-rearing behaviors of parents who could improve and promote healthy growth and development of children. It was asserted that family processes were associated with the impacts of poverty on a wide array of socio-emotional problems such as anxiety, depression and poor social skills (Conger et al., 1992; Parke et al., 2004) as well as on certain behavioral problems related to youth adjustment, impulse control, aggression and drug use (Clark-Lempers & Simons, 1989; Mistry et al., 2002).

Significantly, parents were able to produce and enhance the educational experience of their children within the family process. The stress and strain of parents stemming from poverty and economic hardships, as well as their depressed mood, could lead to poor socialization, education and rearing of children. Such parenting practices had a negative impact on the academic achievement of children and adolescents. Otherwise stated, parental depression and poor socialization, education and rearing of older children and adolescents explained the negative impact of economic stress and strain on their academic performance (Conger et al., 1992; Gutman & Eccles, 1999). Considering the prominent role of family contexts in children's early cognitive, social, and emotional development, the family process model could be applied to young children. Studies implied that parental behaviors and practices, such as non-punitive discipline, cognitive stimulation, house rules and routines, to socialize, educate and rear children in a positive way, helped explain the relationship between family income and children's initial learning (Burchinal, Roberts, Zeisel). , Hennon & Hooper, 2006; Raver et al., 2007; Yeung et al., 2002).

In spite of strong empirical support, debate continued over how well the family process model could be applied to children's transition to school and family processes related to education. It was underlined that further research was needed on this topic. In view of the fact that the probability of poverty and its negative consequences was expressed more in early childhood than later periods (Arnold & Doctoroff, 2003; Duncan, Yeung, Brooks-Gunn & Smith, 1998), it was asserted that the highest risk for cognitive, academic and educational development or intelligence occurred during the early childhood years. The beginning of formal and regular education served as a basis for students' educational life and careers and could play the most pivotal role in the formation of students' learning trajecto-

ries. The beginning of formal and regular education was a crucial point of intervention for children from poor families, as it served as a basis for students' educational lives and careers and was a period when learning trajectories were most malleable (Alexander & Entwisle, 1988). Determining the greatest impact of family processes on the academic outcomes of children from poor families was regarded as a first step in handling long-standing educational inequalities.

The Present Study

The present study aimed to explore the benefits of the family process model in explaining children's transition to primary school, having a focus on family processes related to education. Parental educational involvement was broadly defined as efforts and attempts provided by parents to work with schools and children in order to increase and enhance children's academic performance. Parental involvement was linked to school-related outcomes of low- and high-achieving students across socioeconomic status (SES) and demographic factors such as gender, age, race/ethnicity (Crosnoe, 2001; Englund, Luckner, Whaley & Egeland, 2004; Epstein & Sanders, 2002; Hill et al., 2004; Suizzo & Soon, 2006). Children of parents who were especially involved in their children during the early years of education demonstrated better reading and math skills than the children of less involved parents (Hill, 2001; Crosnoe & Cooper, 2010). Parents' early educational involvement predicted children's motivation, self-efficacy, and prosocial behaviors (Dickinson & DeTemple, 1998; Fantuzzo, Tighe, & Perry, 1999; Parker, Boak, Griffin, Ripple & Peay, 1999).

Researchers hypothesized that poverty in the family could reduce parental involvement behaviors owing to circumstances, compulsions, life stresses and tensions, covert or overt discrimination, obstruction and discouragement that might restrict poor parents' involvement. Economically disadvantaged parents often worked long hours, held multiple jobs, and were likely to have less access to transportation that restricted and constrained their' educational involvement (Lareau, 2003; Newman & Chin, 2003). Poor parents were less optimistic about their children's educational options and opportunities and felt less confident intervening on behalf of their children at a school or believed that their involvement was less important for increasing their children's success compared to wealthier parents (Crosnoe, Mistry & Elder, et al. 2002; Furstenberg, Cook, Eccles, Elder & Sameroff, 1999; Lareau, 2003). Teachers were likely to negatively influence the involvement of poor parents when they reduced their expectations about their children and had negative perceptions of parental attitudes and values (Alexander, Entwisle & Thompson, 1987; Lareau & Horvat, 1999). The study argued that lower levels of parental educational

involvement were linked to poverty and this parental involvement might disrupt children's mathematics and reading achievement during transition to primary school, and it also addressed significant differences in family conditions in early childhood care and kindergarten entry and school quality related to poverty. (Lichter, 1997; Waldfogel, 2006).

Based on family process models, the present study hypothesized that the psychological distress, stress, and tension related to poverty could impair and hamper positive socialization, education and child rearing practices. Factors associated with past and present racial discrimination could change parental responses to poverty (Collins, David, Handler, Wall & Andes, 2004). Poor racial-minority families were more likely than White families to live in persistent poverty and isolated areas of extreme poverty (Kozol, 1991; McLoyd, 1998). The long-standing difficulties, disadvantages, restrictions, and lack of resources confronted by poor families could intensify the negative impacts of poverty on socialization, education and rearing behaviors and practices of parents.

Despite the fact that parents from various racial/ethnic backgrounds engaged in many of the same involvement behaviors, their education-related beliefs and expectations might demonstrate differences (García Coll, Meyer & Brillon, 1994). Studies indicated that Asian parents held higher educational expectations for their children's performance at school and their general educational attainment compared to parents from other racial/ethnic groups (Chao, 1996; Chen & Stevenson, 1995; Okagaki & Frensch, 1998). Such similar socialization, education and child rearing behaviors and practices could be moderated by different parenting goals, and these could guide their socialization, education, and rearing behaviors and practices. Consequently, they produced different impacts on the academic performance of their children. Moreover, race/ethnicity could affect school personnel's responses to parental involvement behaviors. Similar types and levels of parental educational involvement could provide benefits to White parents compared to their peers from other racial-minority groups (Lareau, 1999).

The degree to which parental involvement influenced children's transition to school varied owing to racial differences in terms of opportunities for accessing and utilizing high-quality education-related resources. As stated earlier, racial-minority families predominantly resided in areas of severe poverty compared to White families. When education-related resources such as activities organized for children by schools and communities in extreme-poverty areas were of a lower quality compared to the resources accessible and available to poor White parents, the relationships between involvement behaviors and initial academic achievement could vary accordingly (Furstenberg et al., 1999). The present study discussed to what extent the family process model could be applied to an important

period in early childhood and to what extent it could be generalized across different strata of society.

Method

Sample

The Early Childhood Longitudinal Study-Kindergarten Cohort (ECLS-K) was designed by the National Center for Education Statistics (NCES) to provide comprehensive data for education policies and to create a nationally representative database on young children that can be used by scientific research. A total of 21,260 students enrolled in full-day or half-day kindergarten programs in both public or private schools participated in the study. In-depth interviews were conducted with the parents by telephone or in person. The teachers both assessed the children and filled out self-administered questionnaires about their background, experience, teaching style and classroom environment. Data related to the basic demographic, structural and environmental characteristics of schools were collected from school administrators. Children were given tests prepared to diagnose certain cognitive skills including verbal language, reading, and mathematics.

Measures

Children's Cognitive Achievement

In the study, children's cognitive achievement was measured and assessed based on their math and reading skills. Children concluded and completed timed assessments in reading and math. Children's math performance was measured and assessed by their math skills on numbers, shapes, relative sizes, addition, addition and subtraction, subtraction, and multiplication and division with scores ranging from 7 to 60. Children's reading performances were measured and assessed by skills such as recognizing and identifying letters, starting and ending sounds, recognizing and comprehending the meaning of words with scores ranging from 10 to 71. The research first assessed children's math and reading performance and then based their performance on low-, medium-, and high-level difficulty.

Table 1 Descriptive Data for Variables in the Study (N = 20,356)

Variables	%	*M*	*SD*	Range
Cognitive Achievement in Kindergarten				
Mathematics achievement		27.48	8.84	7-60
Reading achievement		31.58	10.85	10-71
Parental Educational Involvement				
Cognitively stimulating and enhancing materials		2.63	0.96	1-4
Organized activities		1.13	1.29	0-8
Parents' home learning activities for their children		2.78	0.49	1-4
Parental involvement in school learning activities of children		4.27	1.79	0-7
Family Economic Status				
Below the official poverty line	20.77			0-1
On the official poverty line	23.11			0-1
Over the official poverty line	56.12			0-1
Family Characteristics				
Parental education		2.91	1.17	1-5
Maternal full-time employment	43.81			0-1
Maternal part-time employment	25.07			0-1
Non-working mothers	31.12			0-1
Paternal full-time employment	81.84			0-1
Paternal part-time employment	14.01			0-1
Non-working fathers	4.15			0-1
Family structure (parents)	66.92			
Student Control Variable				
Age (school starting age)		5.68	0.35	4,5-6,58
Gender (female)	49.32			0-1
School Control Variable				
School sector (private)	21.45			

Source*: The Early Childhood Longitudinal Study–Kindergarten Cohort (ECLS-K).*

Parental Educational Involvement

Parental educational involvement was assessed using items from the Home Observation for the Measurement of the Environment (HOME) Scale (Caldwell & Bradley, 1984) based on Early Childhood Longitudinal Study- Kindergarten Cohort (ECLS-K) (Crosnoe, 2006; Gershoff, Aber, Raver, & Lennon, 2007; Magnuson, Meyers, Ruhm, & Waldfogel, 2004). In the study, parents' provision of cognitively stimulating and enhancing materials at home was assessed by taking the average of three items. Number of children's books was determined using a four-point scale that

included options such as 1 = *0-24*; 2 = *25-49*; 3 = *50-99*, 4 = *100-200*; children's recordings or CDs using a four-point scale such as 1 = *0-3*; 2 = *4-9*; 3 = *10-24*; 4 = *25-100* . Whether the family had a computer used by the children was determined using a two-point scale including options such as 1 = *no*, 4 = *yes* (a = .67). Enrollment in organized activities reflected the sum of whether the children were involved in eight outdoor activities (1= yes), such as art, sports, and music (a = .61). In order to identify home learning activities, parents were asked how often they engaged their children in home activities related to reading, telling stories, singing, nature or science, physical exercise and practice, art, building, games or puzzles, and household chores. Parents reported how often they engaged their children in home learning activities on a four-point scale: 1 = not at all, 2 = once or twice a week, 3 = three to six times a week, 4 = every day (a = .72). Parents were also asked whether they contacted and communicated with the teacher, attended an open house, parent-teacher conferences, Parent-Teacher Association (PTA) meetings, school or classroom organizations, or volunteered at school events (1 = yes) and their school-based involvement was then measured and assessed (a = .60).

Family Poverty

Family size as well as annual family income was reported by parents. Family economic status was determined as three variables: poor (below the official poverty line), low income (on the official poverty line), and non-poor (above the official poverty line).

Controlling Children

In view of the fact that poverty was combined with family background and dynamics and due to certain observed impacts of poverty on parental involvement or children's academic performance, other family characteristics were taken into consideration. Accordingly, family structure, educational level and job status of parents were included in the study as control variables. Family structure was determined as biological parents or step-parents, with parents' educational level described as 1 = *lower than high school*, 2 = *high school graduation*, 3 = *some post-secondary education*, 4 = *university graduation*, 5 = *postgraduate degree*. The job status of the parents was defined as full-time, part-time and non-working.

Analysis Plan

In order to test the mediation model, data analysis followed five general steps. (1) Each parent's educational involvement variable, economic status variables, control variables and other involvement variables were regressed to explore whether family poverty was related to parental edu-

cational involvement. (2) The variables of kindergarten success, poverty and control were regressed to assess the magnitude and significance of the association between poverty and kindergarten success,. (3) Parental educational involvement variables were added to the previous model to explore whether they were linked to preschool achievement and whether they explained the association between poverty and preschool achievement. (4) The statistical significance of each indirect effect was estimated using the Sobel (1982) test. (5) These stages were followed within the sample groups. Multilevel models included interactions between poverty and race, and between parental educational involvement and race, and they were used to explore whether racial differences existed in statistically significant focal relationships.

Results

A Family Process Model for Children's Transition to Primary School

Descriptive statistics on key factors for children from poor families (below the official poverty line), low-income families (on the official poverty line), and non-poor families (above the official poverty line) were illustrated in Table 2. (1) Black and Hispanic children were more widely represented in poor families, while White and Asian children were underrepresented in these families. (2) Non-poor parents had the highest educational level and educational attainment, and were most likely to be married and hold full-time jobs. (3) Non-poor parents had the highest mean scores on measures of parental educational involvement, followed by low-income parents and then poor parents. (4) Poor children obtained the lowest levels of kindergarten success, while non-poor children achieved the highest levels.

Table 2 Descriptive Data by Poverty Level

	Poor	Low income	Non-poor
	N = 4.228	N = 4.707	N = 11.421
Family Background			
Black families (%)	30.46*	19.59*	8.77*
Asian families (%)	7.94	7.54*	8.07*
Hispanic families (%)	30.79*	23.10*	10.49*
White families (%)	25.86*	47.35*	71.49*
Family Characteristics			
Parental education	2.00*	2.44*	3.44*
Maternal full-time employment (%)	31.87*	43.82*	48.23*
Paternal full-time employment (%)	58.33*	79.55*	91.48*
Family structure (% parents)	38.83*	58.44*	80.80*
Parental Educational Involvement			
Cognitively stimulating and enhancing materials	1.85*	2.33*	3.04
Organized activities	0.55*	0.78*	1.48*
Parents' home learning activities for their children	2.69*	2.76*	2.82*
Parental involvement in school learning activities of children	3.18*	3.95*	4.81*
Kindergarten achievement			
Mathematics achievement	22.69*	25.47*	30.08*
Reading achievement	25.95	29.24*	34.63*

Note: Families below the poverty line were defined as poor, families on the poverty line as low income and families above the poverty line as non-poor. Means with the same superscript within each series differed significantly at the P = .05 level as determined by Duncan's multiple range test. Parental education ranged from 1 = *below high school* to 5 = *graduate degree*. Cognitively stimulating and enhancing materials were arranged from 1 to 4, organized activities from 0 to 8, parents' home learning activities for their children from1 to 4, and parental involvement in school learning activities of children from 0 to 7. Scores for children's kindergarten achievement ranged from 7 to 60 for math achievement and from 10 to 71 for reading achievement (Cooper, Crosnoe, Suizzo, & Pituch, 2010, p. 870).

Utilizing the family process model, the present study aimed to explore the extent to which parental educational involvement mediated the association between family poverty and children's academic achievement during their transition to primary school. Researchers sought to predict the association between poverty and each parent's educational involvement variable. After checking for other measures of involvement and all sets of controls, poor parents were observed to be less able than wealthier parents to engage their children in organized activities ($B = -0.11$, $p < .001$). Poor parents were less able to provide cognitively stimulating and enhancing materials

for their children compared to wealthier parents (B = -0.27, p < .001) and were less able to become involved and engaged in their children's education at school (B = -0.46, p < .001). Contrary to all expectations, poor and non-poor parents reported similar levels of home learning activities for their children.

Table 3. Results of Multilevel Models Predicting Kindergarten Achievement

	Math achievement				**Reading achievement**			
	Model 1		Model 2		Model 1		Model 2	
Variable	*B*	*SE*	*B*	*SE*	*B*	*SE*	*B*	*SE*
Family Economic Status								
Below the official poverty line	-1.73***	0.21	-1.09***	0.21	-2.80***	0.37	-2.14***	0.34
On the official poverty line	-0.91***	0.17	-0.50**	0.17	-1.31	0.22	-0.91***	0.21
Demographic Characteristics								
Age (school starting age)	5.74***	0.19	5.61***	0.18	4.71***	0.24	4.59***	0.23
Gender (female)	0.06	0.12	-0.22	0.12	1.95***	0.87	1.70***	0.15
Black	-3.01***	0.22	-2.49***	0.22	-1.42***	0.32	-091**	0.35
Asian	0.41	0.35	1.17***	0.34	2.37***	0.49	3.14***	0.52
Hispanic	-1.99***	0.21	-1.32***	0.21	-2.45**	0.69	-1.70*	0.64
Family Characteristics								
Parental education	1.58***	0.07	1.14***	0.07	1.95***	0.14	1.50***	0.12
Maternal full-time employment	-0.11	0.18	-0.09	0.17	-0.27	0.24	-0.27	0.24
Maternal part-time employment	0.23	0.18	0.07	0.18	0.26	0.27	0.08	0.26
Paternal full-time employment	0.72*	0.33	0.57	0.32	0.62	0.38	0.46	0.38
Paternal part-time employment	0.94**	0.36	0.80*	0.36	0.81	0.55	0.66	0.53
Family structure (parents)	0.81***	0.16	0.59***	0.15	0.63*	0.27	0.43	0.28
Parental Educational Involvement								
Cognitively stimulating and enhancing materials			1.37***	0.09			1.38***	0.15
Organized activities			0.46***	0.05			0.40***	0.07
Parents' home learning activities for their children			-0.02	0.13			0.34	0.18
Parental involvement in school learning activities of children			0.10*	0.04			0.12*	0.05

Note: All models included control variables. The poor category referred to families with incomes below the official poverty line for family SES and the low-income category to families on the official poverty line. Maternal/paternal employment or not employed categories were used for the job status of parents; *p < .05, **p < .01, ** *p < 001. (Cooper, Crosnoe, Suizzo, & Pituch, 2010, p. 871).

The study assessed whether the inverse relationship between family poverty and children's preschool success was statistically significant after the control variables were explicated. The results of the multilevel models that predicted children's kindergarten success and reading success were presented in Table 3. Model 1, which started with mathematics, showed that family poverty was negatively associated with kindergarten math achievement for poor children ($B = –1.73$, $p < .001$) and for low-income children ($B = –0.91$, $p < .001$). The difference between poor and non-poor children displayed approximately one-fifth of the standard deviation in kindergarten mathematics.

In the third stage, the research established whether all forms of parental educational involvement were significantly related to kindergartner's mathematics achievement. Model 2 indicated a significant positive relationship ($B = 1.37$, $p < .001$) between cognitively stimulating and enhancing materials and children's kindergarten mathematics achievement. Organized activities ($B = 0.46$, $p < .001$) and parental involvement at school ($B = 0.10$, $p < .05$) also predicted children's kindergarten mathematics achievement. Learning activities at home did not predict kindergarten math achievement. Against all expectations, home learning activities did not predict math achievement. The coefficient of economic status for children from the lowest income families decreased by approximately 40% with the inclusion of the four educational involvement variables of the parents. In the fourth stage, the research assessed each mediator utilizing the Sobel test. Not only cognitively stimulating and enhancing materials and organized activities, but also parental involvement in school mediated the association between family poverty and children's kindergarten math achievement.

Similar results were obtained for kindergartner's reading achievement, as well. The inverse relationship between family poverty and children's reading achievement in kindergarten was found to be statistically significant for poor children ($B = –2.80$, $p < .001$) and for low-income children ($B = –1.31$, $p < .001$) after all control variables were explicated. Compared to children of less involved parents, kindergartners had higher reading scores when their parents provided cognitively stimulating and enhancing materials ($B = 1.38$, $p < .001$), when they engaged their children in organized activities ($B = 0.40$, $p < .001$) and when they were involved in the education of children at school ($B = 0.12$, $p < .05$). Compatible and consistent with the findings for children's kindergarten math achievement, home learning activities did not predict kindergartners' reading success. The coefficient for family poverty decreased by approximately 25% when the four measures of parental educational involvement were included, As proposed by the Sobel test, cognitively stimulating and enhancing materi-

als, organized activities, and involvement in children's education at school served as significant mediators.

Discussion

This study endeavored to explore the educational life and academic trajectories of poor children in transition to primary school during the critical period of their early childhood years. Previous research revealed that poor children started school with significantly lower cognitive skills than their richer peers, and the cognitive skills and academic achievement inequalities and gaps observed between children from poor families and their peers from wealthier families widened as they progressed through the education system (Lee & Burkam, 2002). The present study aimed to contribute to the literature by examining whether the differences in parental involvement in children's education, which might be caused by and related to poverty, influenced the differences in children's primary learning, and whether the educational and academic role of parents changed in certain families and groups.

Against all expectations, the study discovered that home learning activities did not explain poorer children's lower achievement levels. For the most part, poor parents reported that they were just as involved and engaged as their non-poor parents when it came to children's learning activities at home. However, the way poor parents engaged in their children's learning activities at home did not appear to improve children's early academic success. Separate examination of learning activities at home revealed that reading and science-related activities significantly mediated the association between family poverty and children's kindergarten success. As a form of educational involvement, parents' engaging their children in reading and science-related activities at home was more closely associated with the academic demands children were exposed to in the classroom compared to other learning activities, and could be more beneficial for meeting academic demands.

Consistent with expectations, the study found that poorer parents provided fewer cognitively stimulating and enhancing materials, less engaged their children in organized activities, and were less involved and engaged in their child's school than wealthier parents. Although poor parents wanted to be involved and engaged in their children's education, the financial hardships, time-restrictions and poverty-related difficulties could limit their educational involvement (Newman & Chin, 2003). When schools held negative perceptions about the values and attitudes of poor parents or their children's academic potential, this might discourage parents from displaying educational involvement (Alexander et al., 1987; Lareau, 2003).

Irrespective of why economically disadvantaged or poor parents were less involved in their children's schools, the results of the present study asserted that lower levels of parental educational involvement did not augur well for poor children's ability to transition to school. When parents demonstrated less involvement in their children's school and had less contact and communication with school staff, then poor parents who didn't demonstrate involvement might be deprived of critical information about their children's educational and academic performance and progress, about how they could intensify, support and strengthen learning at home and about the services and resources of the school (Lareau, 2003). Consequently, these poor parents were less able to support and shape their children's educational and academic development during this critical period of educational transition. That being said, when poor parents were less able to provide valuable educational materials that could stimulate and enhance their young children cognitively, or engage less in organized activities that would help them prepare for school, then their children might find themselves in a disadvantageous position in the educational institutions where they contended and competed with one another.

For the entire research sample, the findings rendered support for the application of the family process model to educational outcomes in children's transition to primary school, and were compatible and consistent with relevant research on family income in the Early Childhood Longitudinal Study-Kindergarten Cohort (ECLS-K) (Gershoff et al., 2007; Crosnoe & Cooper, 2010). The research also established that parental forms of educational involvement served the function of key family processes in children's transition to primary school as a critical period.

The research indicated that the impact of being born into and living in poverty on children's academic performance was highly race-specific, and discovered that poor children had more academic problems while transitioning to school than non-poor children from Black, Hispanic, and White families. Conversely, Asian children born into and living in poor and non-poor families had similar math and reading achievement levels. It was proposed that one reason for this unexpected finding might be associated with the educational and academic expectations and beliefs of Asian parents. The fact that Asian children born into and living in poor and non-poor families had similar levels of mathematics and reading achievement was tried to be explained on the basis of educational and academic expectations and beliefs of their parents. Across socioeconomic statuses and various ethnic subgroups, research asserted that Asian parents held higher expectations than other racial/ethnic parents for their children's educational and academic performance and for the amount of effort their children exerted for school-related activities (Chao, 1996; Chen & Stevenson, 1995; Okagaki

& Frensch, 1998). The higher educational and academic expectations of parents in Asian families were able to protect to some extent children from the risks of poverty related to academic achievement.

Impacts of poverty on early childhood education displayed variations across racial-ethnic groups. Only in Hispanic and White families, poor parents were less able than wealthier parents to engage their children in organized activities. As the coefficient for Asians was not significantly different from that of other racial/ethnic groups, only the findings for Black families were addressed. Poor and non-poor children in Black families were equally able to take part in organized activities. Separate analyses of organized events revealed that Black children were more involved and engaged in sports or organized performances such as church choir compared to other events, irrespective of their SES. Considering the importance of sport and church involvement and participation in Black communities, poor Black parents might have had greater opportunities to involve and engage their children in these activities compared to poor parents from other racial/ethnic groups (Furstenberg et al., 1999).

Research findings revealed that the view that parental educational involvement implied the early academic achievement of children was not necessarily true for children from different racial/ethnic groups. Although poor and non-poor Black parents reported that they had involved their children in organized activities, the academic outcomes or rewards for these activities were lower for Black children compared to other activities. The research investigated each organized activity separately, including home learning activities, and did not find any association with the educational and academic success of Black children. Although understanding this finding required further research, it might be associated with communities in which Black families lived. When they resided in isolated communities with less access to high-quality activities for children (Brooks-Gunn, Duncan & Aber, 1997; Furstenberg et al., 1999), then young Black children might have less of an impact on their educational and academic achievement related to available and usable activities.

The study also determined that only Hispanic children, whose parents engaged them in learning activities at home, had higher reading achievement levels than those whose parents were less involved. The positive impact of home learning activities on children's reading was maintained in this sample by virtue of English-speaking parents. Hispanic parents born in the United States might have been more likely to speak English and were mostly found to engage their children in home learning activities more compared to foreign-born parents. Moreover, the positive relationship between learning activities at home and reading achievement in kindergarten was significant for children of parents born in the United States, but not for

children of foreign-born parents.

Although the present study on the educational involvement of parents endeavored to contribute to the foundation of knowledge on the early childhood education of poor children, it had certain limitations. The study was limited to the measures provided in The Early Childhood Longitudinal Study-Kindergarten Cohort (ECLS-K) data. Although The Early Childhood Longitudinal Study-Kindergarten Cohort (ECLS-K) did not totally focus on these forms of involvement, previous research indicated that the emotional and motivational forms of parental involvement in their children's education at home strongly predicted their educational outcomes (Suizzo & Soon, 2006; Yan & Lin, 2005). Besides, this research explored parental educational involvement and children's academic achievement at a given point in time. Previous research on adolescents demonstrated the value and significance of examining patterns of parental educational involvement over time (Crosnoe, 2001). Taking into account the studies that addressed the interrelationships between parental educational involvement and children's academic success, research conducted to explore the trajectories of children's educational and academic success allowed more careful consideration of causal effects in the relationship between parental educational involvement and children's academic success (Shumow & Miller, 2001).

As indicated by Lee and Burkam (2002), academic achievement inequalities and gaps between children from lower SES families and their peers from higher SES families were initially quite real and persisted in kindergarten and primary school; thus, they could nurture and support the transmission of poverty from one generation to the next or the intergenerational reproduction of poverty. It has been argued that the educational disparities, inequalities and gap between children from poor and wealthier families at the entry to school were not only a financial issue. This research established evidence that parental involvement had a role in the educational life of economically disadvantaged children. Governments and the Ministry of Education should concentrate more on educational policies designed to enhance the academic achievement of economically disadvantaged children. High priority and importance should be attached to policies seeking to protect children from the negative and harmful impacts of poverty on educational life and academic achievement. Economic, social and cultural measures and interventions aimed at reducing or eliminating the risk as well as negative and harmful effects of poverty on educational life and academic achievement should be implemented.

Bibliography

Alexander, K. L., Entwisle, D. R., & Thompson, M. S. (1987). School performance, status relations, and the structure of sentiment: Bringing the teacher back in. *American Sociological Review, 52*, 665-682.

Alexander, K., & Entwisle, D. (1988). *Achievement in the first two years of school: Patterns and processes*. Chicago: University of Chicago Press.

Arnold, D. H., & Doctoroff, G. L. (2003). The early education of socioeconomically disadvantaged children. *Annual Review of Psychology, 54*, 517-545.

Blaire, C., & Scott, K. G. (2002). Proportion of LD placements associated with low socioeconomic status: Evidence for a gradient? *Journal of Special Education, 36*, 14-22.

Brooks-Gunn, J., Duncan, G. J., & Aber, J. L. (1997). *Neighborhood poverty: Context and consequences for children* (Vol. 1). New York: Russell Sage.

Burchinal, M., Roberts, J. E., Zeisel, S. A., Hennon, E. A., & Hooper, S. (2006). Social risk and protective child, parenting, and child care factors in early elementary school years. *Parenting: Science & Practice, 6*, 79-113.

Caldwell, B. M., & Bradley, R. H. (1984). *Home observation for measurement of the environment*. Little Rock: University of Arkansas Press.

Chao, R. K. (1996). Chinese and European Americans mothers' beliefs about the role of parenting in children's school success. *Journal of Cross-Cultural Psychology, 27*, 403-423.

Chen, C. S., & Stevenson, H. W. (1995). Motivation and mathematics achievement: A comparative study of Asian-American, Caucasian-American, and East Asian high school students. *Child Development, 66*, 1215-1234.

Children's Defense Fund. (2004). *The state of America's children*. Washington, DC: Government Printing Office.

Collins, J. W., Jr., David, R. J., Prachand, N. G., & Pierce, M. L. (2003). Low birth weight across generations. *Maternal and Child Health Journal, 7*, 229-237.

Collins, J. W., Jr., David, R. J. Handler, A., Wall, S., & Andes, S. (2004). Very low birthweight in African American infants: The role of maternal exposure to interpersonal racial discrimination. *American Journal of Public Health, 94*, 2132-2138.

Conger, R. D., Conger, K. J., Elder, G. H., Jr., Lorenz, F. O., Simons, R. L., & Whitbeck, L. B. (1992). The family process model of economic hardship and adjustment of early adolescent boys. *Child Development, 63*, 526-541.

Cooper, C. E., Crosnoe, R., Suizzo, M-A. & Pituch, K. A. (2010). Poverty, race, and parental involvement during the transition to elementary school. *Journal of Family Issues, 31*(7), 859-883.

Crosnoe, R. (2001). Academic orientation and parental involvement in education during high school. *Sociology of Education, 74*, 210-230.

Crosnoe, R. (2006). *Mexican roots, American schools: Helping Mexican immigrant children succeed*. Palo Alto, CA: Stanford University Press.

Crosnoe, R., Mistry, R. S., & Elder, G. H., Jr. (2002). Economic disadvantage, family dynamics, and adolescent enrollment in higher education. *Journal of Marriage and Family, 64,* 690-702.

Crosnoe, R., & Cooper, C. E. (2010). Economically disadvantaged children's transitions into elementary school: Linking family processes, school contexts, and educational policy. *American Educational Research Journal.47*(2)*,* 258-291.

Dickinson, D. K., & DeTemple, J. (1998). Putting parents in the picture: Maternal reports of preschoolers' literacy as a predictor of early reading. *Early Childhood Research Quarterly, 13*, 241-261.

Duncan, G. J., Yeung, W. J., Brooks-Gunn, J., & Smith, J. R. (1998). How much does childhood poverty affect the life chance of children? *American Sociological Review, 63*, 406-423.

Duncan, G. J., & Magnuson, K. A. (2005). Can family socioeconomic resources account for racial and ethnic test score gaps? *Future of Children, 15*, 35-54.

Elder, G. H., Jr. (1999). *Children of the Great Depression: Social change in life experience* (25th anniversary ed.). Boulder, CO: Westview.

Emanuel, I., Filakti, H., Alberman, E., & Evans, S. J. W. (1992). Intergenerational studies of human birthweight from the 1958 birth cohort: Evidence for a multigenerational effect. *BJOG: An International Journal of Obstetrics & Gynaecology, 99*, 67-74.

Englund, M. M., Luckner, A. E., Whaley, G. J. L., & Egeland, B. (2004). Children's achievement in early elementary school: Longitudinal effects of parental involvement, expectations, and quality of assistance. *Journal of Educational Psychology, 96*, 723-730.

Epstein, J. L., & Sanders, M. G. (2002). Family, school, and community partnerships. In M. H. Bornstein (Ed.), *Handbook of parenting: Vol. 5. Practical issues in parenting* (pp. 407-437). Mahwah, NJ: Lawrence Erlbaum.

Fantuzzo, J., Tighe, E., & Perry, M. (1999). Relationships between family involvement in Head Start and children's interactive peer play. *NHSA Dialog, 3*, 60-67.

Furstenberg, F., Cook, T., Eccles, J., Elder, G. H., Jr., & Sameroff, A. (1999). *Managing to make it: Urban families and adolescent success*. Chicago: University of Chicago Press.

García Coll, C. T., Meyer, E. C., & Brillon, L. (1994). Ethnic and minority parenting. In M. H. Bornstein (Ed.), *Handbook of parenting: Vol. 2. Biology and ecology of parenting* (pp. 189-209). Hillsdale, NJ: Lawrence Erlbaum.

Gershoff, E. T., Aber, J. L., Raver, C. C., & Lennon, M. C. (2007). Income is not enough: Incorporating material hardship into models of income associa-

tions with parenting and child development. *Child Development, 78*, 70-95.

Gutman, L. M., & Eccles, J. S. (1999). Financial strain, parenting behaviors, and adolescents' achievement: Testing model equivalence between African American and European American single- and two-parent families. *Child Development, 70*, 1464-1476.

Hill, N. E. (2001). Parenting and academic socialization as they relate to school readiness: The roles of ethnicity and family income. *Journal of Educational Psychology, 93*, 686-697.

Hill, N. E., Castellino, D. R., Lansford, J. E., Nowlin, P., Dodge, K. A., Bates, J. E., et al. (2004). Parent academic involvement as related to school behavior, achievement, and aspirations: Demographic variations across adolescence. *Child Development, 75*, 1491-1509.

Kozol, J. (1991). *Savage inequalities*. New York: Crown.

Lareau, A., & Horvart, E. M. (1999). Moments of social inclusion and exclusion: Race, class, and cultural capital in family-school relationships. *Sociology of Education, 72*, 37-53.

Lareau, A. (2003). *Unequal childhoods: Class, race, and family life*. Berkeley: University of California.

Lareau, A., & Horvart, E. M. (1999). Moments of social inclusion and exclusion: Race, class, and cultural capital in family-school relationships. *Sociology of Education, 72*, 37-53.

Lee, V. E., & Burkam, D. T. (2002). *Inequality at the starting gate: Social background differences in achievement as children begin school*. Washington, DC: Economic Policy Institute.

Lempers, J. D., Clark-Lempers, D., & Simons, R. L. (1989). Economic hardship, parenting, and distress in adolescence. *Child Development, 60*, 25-39.

Lichter, D. T. (1997). Poverty and inequality among children. *Annual Review of Sociology, 23*, 121-145.

Magnuson, K. A., Meyers, M. K., Ruhm, C. J., & Waldfogel, J. (2004). Inequality in preschool education and school readiness. *American Educational Research Journal, 41*, 15-158.

Mayer, S. E. (1997). *What money can't buy*. Cambridge, MA: Harvard University Press.

McLoyd, V. C. (1990). The impact of economic hardship on black families and children. *Child Development, 61*, 311-346.

McLoyd, V. C. (1998). Socioeconomic disadvantage and child development. *American Psychologist, 53*, 185-204.

Mistry, R. S., Vandewater, E. A., Huston, A. C., & McLoyd, V. C. (2002). Economic well-being and children's social adjustment: The role of family process in an ethnically diverse low-income sample. *Child Development, 73*,

935-951.

Newman, K., & Chin, M. (2003). High stakes, time in poverty, testing, and the children of the working poor. *Qualitative Sociology, 26*, 3-34.

Okagaki, L., & Frensch, P. A. (1998). Parenting and children's school achievement: A multi-ethnic perspective. *American Educational Research Journal, 35*, 123-144.

Oreopoulos, P., Page, M. E., & Stevens, A. H. (2006). The intergenerational effects of compulsory schooling. *Journal of Labor Economics, 24*, 729-760.

Parke, R. D., Coltrane, S., Duffy, S., Buriel, R., Dennis, J., Powers, J., et al. (2004). Economic stress, parenting, and child adjustment in Mexican American and European American families. *Child Development, 75*, 1632-1656.

Parker, F. L., Boak, A. Y., Griffin, K. W., Ripple, C., & Peay, L. (1999). Parent-child relationship, home learning environment, and school readiness. *School Psychology Review, 28*, 413-425.

Raver, C. C., Gershoff, E. T., & Aber, J. L. (2007). Testing equivalence of mediating models of income, parenting, and school readiness for White, Black, and Hispanic children in a national sample. *Child Development, 78*, 96-115.

Seccombe, K. (2000). Families in poverty in the 1990s: Trends, causes, consequences, and lessons learned. *Journal of Marriage and the Family, 62*, 1094-1113.

Shumow, L., & Miller, J. D. (2001). Parents at home and at school academic involvement with young adolescents. *Journal of Early Adolescence, 21*, 68-91.

Sobel, M. E. (1982). Asymptotic confidence intervals for indirect effects in structural equation models. In S. Leinhart (Ed.), *Sociological methodology 1982* (pp. 290-312). San Francisco: Jossey-Bass.

Suizzo, M.-A., & Soon, K. (2006). Parental academic socialization: Effects of homebased parental involvement on locus of control across U.S. ethnic groups. *Educational Psychology, 26*, 827-846.

U.S. Census Bureau. (2007). Poverty. Retrieved from www.census.gov/hhes/www/ poverty/poverty.html

Waldfogel, J. (2006). *What children need*. Cambridge, MA: Harvard University Press.

Yan, W., & Lin, Q. (2005). Parent involvement and mathematics achievement: Contrast across racial and ethnic groups. *Journal of Educational Research, 99*, 116-127.

Yeung, W. J., Linver, M. R., & Brooks-Gunn, J. (2002). How money matters for young children's development: Parental investment and family processes. *Child Development, 73*, 1861-1879.

CHAPTER 8

THE EFFECT OF LESSON STUDY ON MATHEMATICS TEACHERS' BEHAVIORS TO PROMOTE THEIR STUDENTS' METACOGNITION IN PROBLEM-SOLVING ENVIRONMENTS[1]

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INTRODUCTION

In recent years, researchers have begun to investigate the concept known as metacognition, which involves individuals being aware of their own learning and thinking processes and consciously controlling them. According to Schunk (2009), metacognition is a high-level form of cognition. Essentially, metacognition is the act of individuals reflecting on their own thinking and learning processes (Gardner, 1987; Yorulmaz, 2006). Therefore, in recent years, in addition to understanding the problem, developing strategies for problem solving, solving the problem using the developed strategies, and evaluation, there has been a growing emphasis on the concept of metacognition in the problem-solving process. Individuals with high metacognitive abilities tend to perform better in problem-solving tasks (Montague, 1998; Pugalee, 2001; Veenman, Kok & Blöte, 2005). However, it remains a question to be answered what teachers do in problem-solving environments to activate their students' metacognition. Nevertheless, there is still an unanswered question regarding the actions educators take in problem-solving situations to stimulate their students' metacognitive processes.

When examining research conducted with teachers on the development of metacognition, it is observed (Houtveen & van de Grift, 2007; Kramarski, 2008) that direct transfer of theoretical knowledge to teachers occurs, but there is limited opportunity for the application of this knowledge and subsequent discussion of these applications. Additionally, in-service courses have both positive and negative aspects (Nartgün, 2006; Özen, 2006). To address these shortcomings, the concept of "lesson study" emerged in Japan as a means of enhancing teachers' professional development (Fernandez, Cannon & Chocksi, 2003). In our country, it is a relatively new practice (Baki, 2012). The term corresponding to this approach in Japanese is translated into English as "lesson study."

Through the lesson study, teachers encounter new and different knowledge, enhance their own knowledge, acquire collaborative skills with group members for a common purpose, learn to create tools and resources to establish an effective environment, and have the opportunity to test methods that facilitate teach together (Lewis, Perry & Hurd, 2009). This distinguishes lesson study from in-service courses. On the other hand, external experts may also participate in lesson study activities to support the work of teachers and teacher candidates (Watanabe, 2005). In this particular situation, the researcher in this study partnered with educators to engage in lesson study exercises with the goal of assisting teachers in enhancing their methods for encouraging their students' metacognitive engagement. Thus, instead of focusing solely on students, this approach focuses on a long-term collaboration with teachers during the lesson study

process to enhance teachers' behaviors that activate their students' metacognition. This can serve as a roadmap for educators, given the importance of problem-solving in the education system.

When examining existing studies, it is observed that while research involving metacognition with teachers is considered important, it is generally underrepresented in the literature. On the other hand, when reviewing the literature on lesson study, it is seen that studies investigate whether lesson study activities have an impact on teachers' professional development (Back & Joubert, 2011; Yoshida & Jackson, 2011; Werhoef & Tall, 2011). The researchers have determined that, the subject matter and pedagogical content knowledge of each participating teacher improved as a result of their involvement in lesson study. However, none of these studies have chosen to focus on enhancing teachers' professional development in the context of the problem-solving process and thereby aiding students. Therefore, this study aims to investigate the impact of lesson study activities conducted with middle school mathematics teachers on teachers' behaviors to promote their students' metacognition in problem-solving environments. In this context, the research problem can be stated as, "What has been the effect of lesson study activities conducted with middle school mathematics teachers on teachers' behaviors to promote their students' metacognition in problem-solving environments?"

METHODOLOGY

In this section, information about the research design, research participants, data collection, and analysis is provided.

Research Design

The research was conducted in three stages to address the research problem. These stages included the preparation phase, pilot implementation, and the main implementation.

Main Implementation

The implementation began in the second semester of the 2011-2012 academic year and concluded at the end of the 2012-2013 academic year, involving four middle school mathematics teachers. At the outset of the implementation, classroom practices of the teachers were observed, and interviews were conducted with them. In order to more effectively tackle the research's sub-problems, the duration of observation periods changed on a weekly basis. Diversity was sought by attempting to enter different classes taught by these teachers as each week approached. Subsequently, in the final months of the second semester of the 2011-2012 academic year and the first semester of the following academic year, lesson study activities were administered with the teachers. These activities were conducted

separately with two groups: one consisting of two teachers, including the researcher, working at the same school, and the other consisting of two teachers, including the researcher, working at a different school. In this context, five independent lesson study cycles were completed with the two separate groups. Each meeting during these activities, held outside regular class hours, lasted approximately 150 minutes per week as the group members gathered.

In the lesson study processes, the researcher facilitated the acquisition of information by the group members through discussions rather than directly providing information from the literature during the briefing stages. They collectively planned for the discussed topics, and the plan was subsequently implemented by the teacher who participated in the lesson study with other teachers. Following this, a lesson study cycle was completed with the stage of discussing the effectiveness of the plan and observing the situations related to it.

Following a certain time frame subsequent to the lesson study activities, another observation was carried out to assess if there had been any modifications in the way teachers engaged their students' metacognition in problem-solving scenarios. This observation began at the beginning of November. Subsequently, monitoring and evaluation observations were continued to assess the continuity of these behaviors.

Participants

The participants in the research consist of four middle school mathematics teachers who are currently working in Kırşehir. The teachers were selected from those who showed willingness to participate in the lesson study activities. All of the teachers who participated in the research were male, and they were working in schools affiliated with the center of Kırşehir. Burak and Emre teachers were working at the same school, while Gökhan and Barış teachers worked together at a different school. In this research, as in previous sections, pseudonyms were used for the teachers.

Data Collection

Under this heading, information about data collection tools and the data collection process will be provided.

Instruments

In this study, data was collected using an observation developed by the first researcher. In the relevant literature, behaviors that teachers can exhibit to activate their students' metacognition in problem-solving environments are briefly and somewhat scattered. However, the information in the literature was compiled, expressed as behaviors that teachers can

exhibit, and categorized by adding problem posing to the problem-solving steps. Categorizing behaviors based on these steps is one of the original aspects of the research. Thus, by considering the problem-solving steps, the behaviors in the literature were further detailed after discussions with experts in the field. Furthermore, the behaviors in the observation were arranged in order of occurrence. This will enable systematic observation to be conducted.

After all of these processes, a draft observation was created, and revisions were made following the pilot study. However, for examining the behaviors of teachers as part of this research, it is not sufficient to merely put certain guidelines into the form as outlined above to obtain a valid, reliable, and useful observation. In the process of developing measurement instruments, measurement tools are prepared in theoretical form-experimental form or only in theoretical form (Yurdugül, 2005). In this research, which does not involve experimental implementation, expert opinions were utilized during the development of the observation, following the theoretical form. The Lawshe technique was employed in the process of determining the content validity ratios.

Data Collection Process

Before the lesson study activities, the exact purpose of the research was not fully disclosed to the teachers. Abbreviations were used, and notes were taken in a condensed manner while observing the teachers' lessons. This was done in an attempt to prevent data loss. After the relevant lessons were observed, the observation checklists were filled out. When filling out the observation, information such as the teacher's name, the grade they were teaching, and the topic for which they posed a problem were recorded in the appropriate sections. In the "Comments" section of the observation, occasional notes were also taken regarding the teacher's behaviors in question. Then, in each problem-solving process, markings were made in the relevant sections to determine which of the behaviors that teachers could exhibit to activate their students' metacognition were performed by the teachers listed in the tables. During this process, the aim was to determine the number of times each behavior was exhibited in each problem-solving process, so one marking was made for each behavior in each process. Another expert in the field repeated this process. For this purpose, the relevant data was provided, and they were asked to fill out the observation as described above. In this way, the final analysis of each observation was achieved by bringing together independent analyses and discussing them. This practice is an important requirement to ensure the validity of the research.

Data Analysis

The data obtained in the study was analyzed using quantitative data analysis methods. In the analysis of the observation, the first step was to determine how many times each behavior listed in the checklists was exhibited by the teachers before, after, and during the follow-up evaluation processes of the lesson study activities. Finally, the distribution of behaviors among the classes was examined in each process.

After these examinations, each behavior listed in the tables was assigned a code, as shown in Table 1, and interpretations were attempted using these codes within the text of the findings.

Table 1. The codes provided in the observation are intended to capture the behaviors exhibited by teachers to promote students' metacognitions during problem-solving environment.

Steps	Metacognitive behaviors	Codes
understand the problem	The instructor informed the students to evaluate their understanding of the problem, specifically whether they had grasped it correctly.	A1
	After asking the students to express the problem in their own words, they were further tasked with verifying its consistency with the original problem statement.	A2
	The students were required to assess whether they had accurately identified the information provided within the problem.	A3
	The students were requested to verify whether they had correctly identified the requisite information outlined in the problem statement.	A4
devising a plan	The students were instructed to assess whether the information they intended to use for solving the problem would contribute to the solution.	B1
	The students were asked to make predictions about the outcome before solving the problem and evaluate whether the path that led them to this prediction was correct.	B2
	The students were tasked with reviewing the strategies they could employ and deciding which strategy might be more effective for solving the problem.	B3
	The students were required to evaluate which of their chosen strategies, compared to the different strategies chosen by their peers, would be more effective in terms of reaching a solution.	B4
	The teacher asked the students how they could guarantee that the plans they had devised would contribute to the solution.	B5

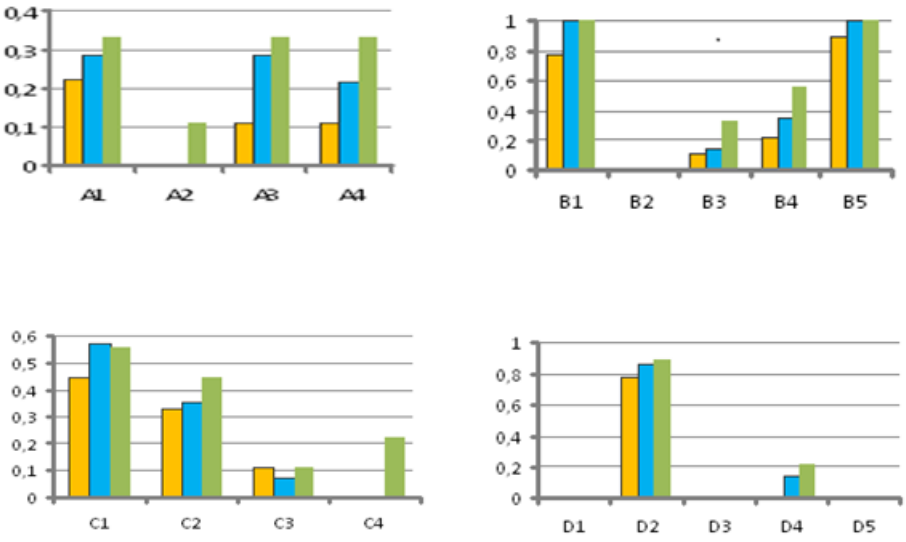
carrying out the plan	The students were instructed to evaluate whether the next step they decided upon would lead them closer to a solution during the problem-solving process.	C1
	The students were told to assess whether the actions they were taking contributed to the resolution of the problem.	C2
	The students were asked to reevaluate their problem-solving processes if they realized they had made mistakes.	C3
	The instructor inquired how the students could ensure the accuracy of the actions they were taking.	C4
looking back	The students who were unable to solve the problem were asked to reassess their problem-solving processes to determine the reasons for their difficulties.	D1
	Students who couldn't solve the problem were encouraged to rethink their problem-solving processes and consider an appropriate strategy for finding a solution.	D2
	The students were instructed to reevaluate their answers in light of the predicted outcome and to verify them.	D3
	The instructor inquired how the students could be confident that their reached solution was correct.	D4
	The students were tasked with comparing their own solutions with those of their peers to decide which one was more accurate regarding the problem.	D5
problem posing	The students were requested to evaluate whether the problem they formulated was comprehensible.	E1
	The students were asked to assess whether the problem they formulated could be solved using relevant data.	E2

FINDINGS

In presenting the findings, data obtained from various data collection tools have been presented together. The findings have been presented separately for each teacher, aiming to provide detailed information about the teachers' situations and the specifics of changes throughout the process.

Influence of Lesson Study Activities on the Behavior of Burak Teacher

The impact of lesson study activities on Burak Teacher's behavior to stimulate his students' metacognition in problem-solving environments is summarized as follows:



The numerical values represent the rates of occurrence (the number of times the behavior is exhibited / the total number of problems posed during the process). The highlighted area in the first column represents pre-lesson study data, the second column represents post-lesson study data, and the third column contains data related to the monitoring and evaluation phase.

Figure 1. *Changes in Burak teacher's behavior*

Figure 1 shows the change in Burak Teacher 's behaviors. When examining Figure 1, it can be observed that prior to the lesson study activities Burak Teacher did not emphasize behavior A2 in the understand the problem step, but significantly increased it in the other stages of the study. Additionally, the occurrence rate of behavior A1 decreased during the monitoring and evaluation observations. Therefore, it can be said that the teacher's increased emphasis on behavior A2 was effective in engaging students' metacognition because the teacher believed that this behavior helped in assessing whether students understood the problem. On the other hand, behavior A4 only occurred in class B, which lagged behind in terms of levels before the lesson study activities. Hence, it can be concluded that the teacher attached importance to verifying whether the correct information was identified in the problem before the lesson study activities, especially in the class where students were lagging behind in terms of levels. This is evident from the fact that the teacher included this behavior in three out of four problems posed to class B before the lesson study activities.

In the subsequent two stages, it can be observed that Burak Teacher exhibited behavior B1 (devising a plan step) in every problem. In this case, the teacher believed that evaluating the information to be used allowed stu-

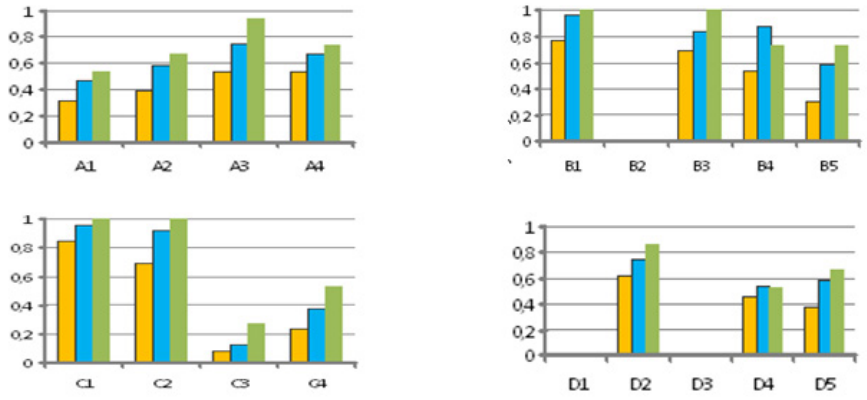
dents to immediately solve the problem. Additionally, the occurrence rate of behavior B3, which was a behavior that the teacher paid less attention to before the lesson study activities, increased significantly in the other stages. However, it was observed that the occurrence rate of behavior B4, which would further enrich the plan for the solution, decreased during the monitoring and evaluation observations compared to the previous stage. Furthermore, behavior B2 was not observed in any of the three stages, as the teacher's views on the importance of prediction skills remained unchanged.

Burak Teacher did not emphasize behavior C3 before the lesson study activities for engaging students' metacognition in the carrying out the plan step. However, in the subsequent stages, the teacher began to include this behavior significantly. Furthermore, it is evident that the teacher's behavior C1 increased significantly as the study progressed. On the other hand, the teacher did not exhibit behavior C4 in any of the three stages, likely due to the teacher expecting students to provide the correct answer immediately at this step rather than engaging in control.

The occurrence rate of Burak Teacher's behavior D2 decreased during the monitoring and evaluation observations compared to the previous stage in the looking back step. Additionally, the graph shows that the teacher's behavior D4 increased significantly in this step as the process progressed. On the other hand, Burak Teacher did not exhibit behaviors D1, D3, and D5 at all during the research period. The teacher's hesitations regarding time played a role in not displaying these behaviors. Furthermore, the teacher did not engage in activities that involved problem posing, which is why these behaviors were not observed during the process. The teacher considered problem posing as an unnecessary activity since it was seen as a waste of time in problem-solving.

Influence of Lesson Study Activities on the Behavior of Emre Teacher

The impact of lesson study activities on Emre Teacher's behaviors that stimulate his students' metacognition in problem-solving environments has been determined as follows:



The numerical values represent the rates of occurrence (the number of times the behavior is exhibited / the total number of problems posed during the process). The highlighted area in the first column represents pre-lesson study data, the second column represents post-lesson study data, and the third column contains data related to the monitoring and evaluation phase.

Figure 2. *Changes in Emre teacher's behavior*

When examining Figure 2, it can be observed that in understand the problem step, Emre Teacher significantly increased the occurrence rates of behaviors A3 and A4 as the study progressed. Additionally, it is noticed that Emre Teacher only included behavior A2 during the monitoring and evaluation observations. This is because the teacher believed that this behavior took too much time. After no students in the underperforming class (class K) were able to understand the problem, Emre Teacher attempted to incorporate this behavior to engage his students' metacognition. Consequently, the students were able to make attempts to solve the problem as a result. However, it is clear from Figure 2 that the teacher did not emphasize these behaviors significantly at this step. This is due to Emre Teacher 's unchanged opinions regarding students providing the information they thought about for the solution after directing the problem to them.

When examining the changes in Emre Teacher 's behaviors in the devising a plan step, it can be seen that behaviors B1 and B5 were performed in every problem after the lesson study activities. Additionally, it is evident from Figure 2 that the occurrence rate of behavior B4 significantly increased as the study progressed. This is because Emre Teacher had the opportunity to implement group work for the first time during the lesson study activities and realized the potential of group work, expressing statements to this effect. However, before the lesson study activities, the teacher only displayed this behavior in the low-performing class (class B). Hence, it can be stated that Emre Teacher's focus on ensuring the active involve-

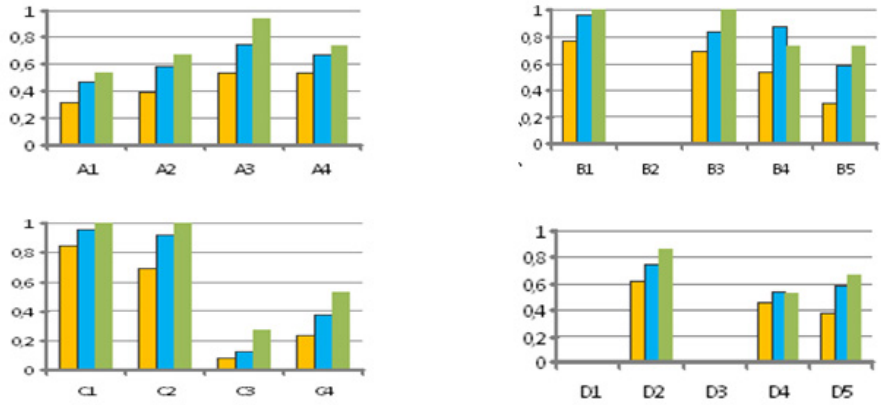
ment of at least one student in the problem-solving process had an impact, as this behavior was lacking in the earlier phases. Prior to this, there were no efforts made for a solution. On the other hand, Emre Teacher did not perform behavior B2, as seen in Figure 2, throughout the study. This is because Emre Teacher, like Burak Teacher, did not believe in the importance of prediction skills.

In the carrying out the plan step, Emre Teacher's behavior C1 was the most frequently exhibited behavior throughout the study. However, the occurrence rate of behavior C3 remained almost the same in all three stages. Furthermore, it was observed that Emre Teacher only performed behavior C4 during the monitoring and evaluation observations, as seen in Figure 2.

In the looking back step, it is seen that Emre Teacher's most frequently displayed behavior throughout the study was behavior D2, as shown in the graph. Additionally, the occurrence rate of behavior D4 increased in the subsequent stages of the study, despite not being included before the lesson study activities. On the other hand, Emre Teacher did not perform behaviors D1, D3, and D5 throughout the study, as seen in Figure 2. The teacher's time constraints played a role in not displaying these behaviors, as did the other teacher. Furthermore, it was found that Emre Teacher did not perform any of the behaviors in the problem posing step. This is because the teacher's belief that problem posing is time-consuming and that the curriculum cannot be completed in this manner remained unchanged. Therefore, the lesson study activities had no effect on these behaviors in this step.

Influence of Lesson Study Activities on the Behavior of Gökhan Teacher

The impact of lesson study activities on Gökhan Teacher's behaviors that stimulate his students' metacognition in problem-solving environments has been determined as follows:



The numerical values represent the rates of occurrence (the number of times the behavior is exhibited / the total number of problems posed during the process). The highlighted area in the first column represents pre-lesson study data, the second column represents post-lesson study data, and the third column contains data related to the monitoring and evaluation phase.

Figure 3. *Changes in Gökhan teacher's behavior*

When examining Figure 3, it can be seen that Gökhan Teacher significantly emphasized behavior A3 to activate his students' metacognition in understand the problem step throughout the research period. This suggests that the teacher's belief in the importance of moving on to the solution process after correctly analyzing the problem was effective. Additionally, it is observed that the occurrence rates of behaviors A1 and A2 increased significantly in the 5th grade compared to the 8th grade during the study. This is because the teacher was curious about how the 5th-grade students understood the problem and made more efforts to help them understand the problem.

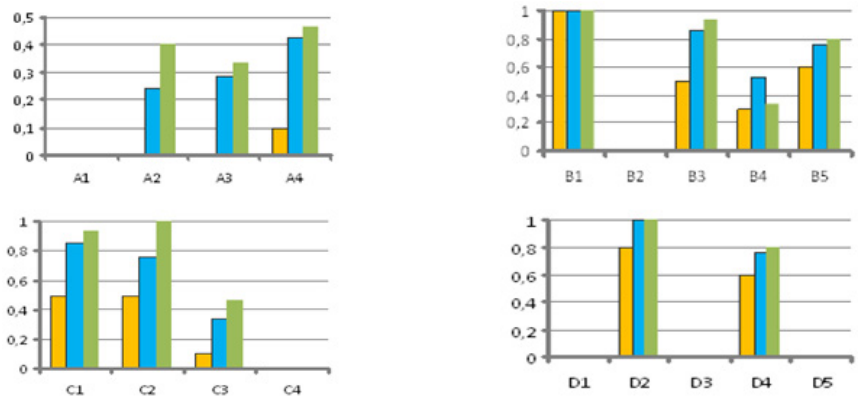
In the devising a plan step, it is observed that Gökhan Teacher most frequently included and exhibited behavior B1, which he performed in every problem during the monitoring observations. This indicates that the teacher generally preferred to communicate more with students at this point, as he wanted them to choose the right information before moving on to solve the problem. However, it is noticed that the occurrence rate of behavior B4 decreased during the monitoring observations. This is because the teacher preferred to engage students in a dialogue about the effectiveness of the chosen strategies instead of directly involving them. Therefore, the occurrence rate of behavior B3 increased steadily. On the other hand, as seen in Figure 3, behavior B2 was not included at all. This is because the teacher believed that prediction skills would never be a way to solve the problem.

When examining the changes in Gökhan Teacher's behaviors that stimulate his students' metacognition in the carrying out the plan step throughout the process, it can be seen from Figure 3 that behavior C1 was performed in almost every problem during the research period. The teacher believed that this approach engaged students in the solution process by maintaining a dialogue with them. On the other hand, the occurrence rate of behavior C3 increased significantly during the monitoring phase.

In the looking back step, the occurrence rates of behaviors D2 and D5, which are behaviors that stimulate his students' metacognition, increased with the lesson study activities. However, it is noted that the occurrence rate of behavior D4 increased only in the 5th grade with the lesson study activities. This is because the teacher tended to ask 5th-grade students about what they found, how they found it, and whether it was correct, while in the 8th grade, he tended to seek the correct answer immediately. Additionally, when examining the graph, it is evident that behaviors D1 and D3 were not included at all. Furthermore, it is found that Gökhan Teacher did not include any behaviors in the problem posing step throughout the process. This is because Gökhan Teacher was the teacher who complained the most about the curriculum. Indeed, the teacher did not include this behavior in the process as he thought that problem posing activities were time-consuming.

Influence of Lesson Study Activities on the Behavior of Barış Teacher

The impact of lesson study activities on Barış Teacher's behaviors that stimulate his students' metacognition in problem-solving environments has been as follows:



The numerical values represent the rates of occurrence (the number of times the behavior is exhibited / the total number of problems posed during the process). The highlighted area in the first column represents pre-lesson study data, the second column represents post-lesson study data, and the third column contains data related to the monitoring and evaluation phase.

Figure 4. *Changes in Barış teacher's behavior*

Figure 4 shows that Barış Teacher exhibited only the A4 behavior in understand the problem step before the lesson study activities. This was because the teacher tried to keep the problem-solving process short before the lesson study activities by structuring it as giving time to think, collecting answers, discussing answers, and solving the problem. His approach before the lesson study activities was effective in encouraging his students to exhibit other behaviors that stimulate metacognition. On the other hand, it can be seen that after the lesson study activities, Barış Teacher started to include the A2 and A3 behaviors in understanding the problem step. Moreover, A3 behavior was not exhibited by any teacher before the lesson study activities to stimulate students' metacognition. However, the lesson study activities led to an increase in the occurrence rates of A2, A3, and A4 behaviors by the teacher. Despite this, as seen in Figure 4, the teacher did not include the A1 behavior throughout the study.

In the devising a plan step, Barış Teacher exhibited the B1 behavior in every problem throughout the study. In addition, the occurrence rates of B3 and B5 behaviors increased during the process. However, as seen in Figure 4, the occurrence rate of the B4 behavior decreased during the observations. The teacher's belief that communication among students would create chaos influenced him not to include this behavior. Furthermore, the B2 behavior was not exhibited throughout the study. The teacher's decision not to include this behavior was influenced by the belief that predicting would not be a useful approach to solve the problem.

In the carrying out the plan step, Barış Teacher consistently exhibited the C2 behavior in every problem during the observations, and the occurrence rate of this behavior significantly increased during the process. On the other hand, as seen in Figure 4, the teacher did not include the C4 behavior throughout the process. Instead of this control, the teacher preferred to provide feedback to the students by saying "correct" or "incorrect" when they told their solutions.

In the looking back step, the teacher included the D2 behavior consistently, except for 2 problems during the process. However, as seen in Figure 4, the D1, D3, and D5 behaviors were not included at all during the study. The teacher cited time as the reason for not including these behaviors, as other teachers did. Moreover, like all other teachers, Barış Teacher did not include any behaviors related to problem posing activities during the study, as he still considered them time-consuming.

DISCUSSION AND CONCLUSION

Sarkar Arani, Keisuke, and Lassegard (2010) stated that the collaborative learning interventions such as cooperative learning may not lead to entirely positive changes. In this study, when examining the findings, it is observed that collaorative learning has been effective in enhancing several behaviors among teachers in problem-solving environments, particularly in activating their students' metacognitive skills. However, it must be noted that the effectiveness of cooperative learning varies across different behaviors, and some behaviors do not show significant improvement. The discussion in the subsequent sections delves into which behaviors were affected and explore the factors influencing their execution. Moreover, it is evident that teachers' beliefs play a pivotal role in determining which behaviors they engage in to stimulate their students' metacognition. Handal and Herrington (2003) have also found that teachers tend to rely more on their beliefs rather than contemporary educational practices in their classrooms. Consequently, some classroom practices related to problem-solving remain unchanged due to the influence of teachers' beliefs.

Many researchers highlight the significance of understanding the problem-solving process as a crucial factor affecting problem-solving performance (Garderen & Montague, 2003; Jitendra et al., 2007; Polya, 1973). However, when examining the distribution of behaviors that stimulate students' metacognition in the problem-solving steps in this study, it is striking to observe that Emre and Barış teachers demonstrated the least amount of these behaviors during understanding the problem step throughout the research. This suggests that both Emre and Barış teachers may prioritize the correct selection of procedures over fostering an understanding of the problem, following a more traditional approach to problem-solving.

When examining the behaviors of Burak, Emre, and Barış teachers in the problem comprehension step, it is observed that they started to exhibit the behavior of requesting students to check the consistency of their problem statements with the problem text in their own words after students express the problem in their own sentences, following cooperative learning interventions. Montague (2008) has emphasized that expressing the problem correctly is fundamental to understanding the problem. As Naser (2008) suggests, students find it easier to solve a problem that they have articulated in their own words. Interestingly, before the cooperative learning interventions, Gökhan Teacher was the first to exhibit this behavior, and he increased this behavior through the interventions. Gökhan Teacher's emphasis on engaging students in discussing the problem situation led to this finding. Indeed, this is the expected behavior from teachers as it allows students to break free from traditional approaches and achieve the desired success in problem-solving. Therefore, students should be encouraged to express the problem situation in their own words.

Another finding related to the problem comprehension step reveals that all teachers gradually increased their behavior of asking students to check whether they correctly identified the given and requested information in the problem. From this, it can be inferred that teachers began to attach importance to students' ability to correctly identify the given and requested information in the problem, thanks to the cooperative learning interventions. On the other hand, it is observed that Barış Teacher did not exhibit the behavior of asking students to evaluate whether they understood the problem correctly throughout the study. However, understanding a problem correctly is crucial when encountering a problem (Altun, 2005). This enables the determination of students' thoughts about the problem, identification of misunderstandings, and the implementation of necessary precautions (Bayazit & Aksoy, 2009). Nevertheless, it is noteworthy that the occurrence rate of this behavior decreased in Barış and Burak teachers during the observation sessions. This situation in Barış and Burak teachers corresponds to the assertion of Artzt and Armour-Thomas (1998), which suggests that teachers often do not place great importance on evaluating what students understand. Despite the cooperative learning interventions, this behavior was not effectively addressed among Barış and Burak teachers. In this regard, it can be said that the resistance to change teachers' beliefs may have played a role. In this context, it can be concluded that a limited number of cooperative learning cycles with teachers may not be sufficient to change some beliefs.

When analyzing the dispersion of teachers' actions aimed at stimulating their students' metacognition throughout the problem-solving stages, it is significant to observe that, in general, all teachers consistently displayed

behaviors to engage their students' metacognition during the planning phase throughout the study. This finding contradicts Fai's (2005) study, as Fai found that teachers rarely allocate time to the devising a plan step during the problem-solving process. When examining the behaviors in this step, it can be observed that Emre Teacher significantly increased the occurrence rate of the behavior of asking students to evaluate which strategy, either their own or their peers' chosen strategies, would be better for solving the problem as the study progressed. Emre Teacher had the opportunity to implement group work for the first time through cooperative learning interventions, and he expressed that he realized the potential of group work. This is an expected outcome, as similar claims have been made by Lee (2008) and Yarema (2010), suggesting that cooperative learning interventions improve teachers' teaching methods by providing them with an opportunity to learn something new. Therefore, teachers should be given the opportunity to implement the theory presented in this study.

It was observed that none of the teachers asked students to predict the outcome before solving the problem and to evaluate whether the path they followed to reach that prediction was correct during the planning step throughout the study. This finding is in line with Çilingir and Türnüklü's (2009) claim that the skill of making predictions, which is among the fundamental objectives of mathematics, is often neglected in practice. The reason for teachers not including this behavior may be that they focus on choosing problem-solving methods and subsequently performing the appropriate operations. In fact, this situation can be attributed to all teachers in our country. In this study, it was not possible to make teachers exhibit this behavior. However, as soon as this situation becomes prominent, a cooperative learning cycle focusing only on prediction could be conducted with teachers during the cooperative learning interventions.

When examining the findings in the carrying out the plan step, it is clear that Burak, Gökhan, and Barış teachers increasingly included the behavior of asking students to evaluate whether the next operation they decided on during problem solving would lead them to the solution thanks to cooperative learning interventions. Gökhan Teacher believed that he approached students towards the solution by engaging in a dialogue with them. On the other hand, when examining the change in another behavior in this step, it is striking that Burak and Barış teachers did not ask students how they could be sure of the accuracy of their operations in all three phases. Yayan (2010) found that students performed poorly in controlling and evaluating their actions during the problem-solving process. This particularly led to unrealistic answers when solving non-standard verbal problems (Öktem, 2009). In this study, students often failed to provide realistic answers to problems. Therefore, teachers should insist on students to control each step

they take in the problem-solving process.

During the looking back step, it was found that Emre teacher's behavior of asking students how they could be sure that their reached conclusion was correct, which he did not exhibit before the cooperative learning interventions, increased in occurrence rate in the subsequent phases of the interventions. Burak, Gökhan, and Barış teachers also exhibited this behavior more frequently as the process progressed. In fact, Polya (1973) noted that even successful students tend to lose interest in the problem-solving process after reaching a solution and do not bother with the crucial step of checking. Therefore, in order to ensure that teachers consistently exhibit this behavior, they should undergo similar educational processes as in the research. When examining another aspect of this step, it was observed that none of the teachers asked students to reevaluate their problem-solving processes to determine why some students couldn't solve the problem, or to have students rethink the answer they found alongside the predicted result for control. Teachers' hesitation due to time constraints played a role in their failure to exhibit this behavior. Similarly, Depaepe, Corte, and Verschaffel (2010) stated that one of the factors affecting the content and implementation in classrooms is time pressure and the need to cover the curriculum. In fact, all teachers with a traditional approach do not prioritize the evaluation step after the problem is solved. This situation is also evident in this study.

In the problem posing step, it is evident that all teachers did not make any attempts to activate their students' metacognition throughout the process. The reason is the teachers' belief that problem posing activities are unnecessary and time-consuming has never changed. However, as soon as this situation becomes prominent, another cooperative learning cycle focusing solely on problem posing could be conducted with teachers during the cooperative learning interventions. This could help teachers change their perspective on this matter. Nevertheless, changing this situation is not an easy task, as teachers do not even prioritize the looking back step, let alone problem posing. English (2001) and Dede and Yaman (2005) also found in their studies that problem posing activities are used less frequently in classrooms compared to problem-solving activities.

REFERENCES

Altun, M. (2005). *Eğitim fakülteleri ve ilköğretim öğretmenleri için matematik öğretimi*, Bursa: Aktüel Yayınları.

Artz, A. F., & Armour-Thomas, E. (1998). Mathematics teaching as problem solving: A framework for studying teacher metacognition underlying instructional practice in mathematics, *Instructional Science, 26,* 5–25.

Back, J., & Joubert, M. (2011, February). *Lesson study as a process for professional development: Working with teachers to effect significant and changes in practice*. Proceedings of 7th Congress of the European Society for Research in Mathematics Education, Rzeszow, Poland.

Baki, M. (2012). *Sınıf öğretmeni adaylarının matematiği öğretme bilgilerinin gelişiminin incelenmesi: Bir ders imecesi (lesson study) çalışması* [*Investigating development of prospective primary teachers' mathematical pedagogical content knowledge: Lesson study]* (PhD Diss.), Karadeniz Teknik University, Trabzon.

Bayazit, İ., & Aksoy, Y. (2009). Matematiksel problemlerin öğrenim ve öğretimi. E. Bingölbali and M. F. Özmantar (Ed.). *Matematiksel problemlerin öğrenimi ve öğretimi matematiksel zorluklar ve çözüm önerileri,*. Ankara: Pegem Akademy.

Dede, Y., & Yaman, S. (2005). Matematik öğretmen adaylarının matematiksel problem kurma ve problem çözme becerilerinin belirlenmesi [Idendification of mathematical problem posing and problem solving skills for prospective mathematics teachers']. *Eurasian Journal of Educational Research*,*18*, 41-56.

Depaepe, F., Corte, E., & Verschaffel, L. (2010). Teachers' approaches towards word problem solving: Elaborating or restricting the problem context. *Teaching and Teacher Education*, *26*, 152–160.

English, L.D. (2001). *Problem posing research: answered and unanswered questions*. Procedings of the annual meeting of the North American chapter of the international group for the psyhology of mathematics education, Snowbird, Utah.

Fai, H. K. (2005). *Two teachers' pedagogies in teaching problem solving in Singapore lower secondary mathematics classrooms*. Paper presented at the ICMI regional conference: The 3rd East Asia Regional Conference on Mathematics Education, Shanghai, Nanjing, and Hangzhou, China.

Fernandez, C., Cannon, J., & Chokshi, S. (2003). A U.S.- Japan lesson study collaboration reveals critical lenses for examining practice. *Teaching and Teacher Education*, *19*, 171-185.

Garderen, D. V., & Montague, M. (2003). Visuaspatial representation, mathematical problem solving, and students of varying abilities. *Learning Disabilities Research & Practice*, *18*(4), 246-254.

Gardner, R. (1987). *Metacognition and reading comprehension.* Norwood, NJ: Ablex.

Handal, B., & Herrington, A. (2003). Mathematics teachers' beliefs and curriculum reform. *Mathematics Education Research Journal*, *15*, 1, 59-69.

Houtveen, A. A. M., & Van de Grift, W. J. C. M. (2007). Effects of metacognitive strategy instruction and instruction time on reading comprehension. *School Effectiveness and School Improvement*, *18*(2), 173-190.

Jitendra, A. K., Griffin, C. C., Buchman, A. D., & Sczesniak, E. (2007). Mathematical problem solving in third-grade classrooms. *The Journal of Educational Research*, *100*(5), 282-302.

Kramarski, B. (2008). Promoting teachers' algebraic reasoning and self-regulation with metacognitive guidence. *Metacognition Learning*, *3,* 83-99.

Lee, J.F.K. (2008). A Hong Kong case of lesson study: Benefits and concerns. *Teaching and Teacher Education, 24*, 1115-1124.

Lewis, C., Perry, R., & Hurd, J. (2009). Improving mathematics instruction through lesson study: A theoretical model and North American case. *Journal of Mathematics Teacher Education*, *12*, 285-304.

Montague, M. (1998). Research on metacognition in special education. In T. E. Scruggs & M. A. Mastropieri (Eds.), *Advances in learning and behavioral disabilities* (pp. 151–183). Oxford: Elsevier.

Nartgün, S. Ş. (2006). İlköğretim okulu öğretmenlerinin hizmetiçi eğitim programlarının etkileri üzerine düşünceleri (Bolu İli Örneği) [Perceptions of primary school teachers in relation to the effects of inservice training (inset) programs (A case study: Bolu)]. Bolu *Abant İzzet Baysal University Journal of Faculty of Education, 6*(1), 157-178.

Öktem, S.P. (2009). *İlköğretim ikinci kademe öğrencilerinin gerçekçi cevap gerektiren matematiksel sözel problemleri çözme becerileri [Abilities of students for solving mathematical word problem which require actual answer*] (Unpublished Master Thesis), Çukurova University, Adana.

Özen, R. (2006). İlköğretim okulu öğretmenlerinin hizmetiçi eğitim programlarının etkilerine ilişkin görüşleri (Düzce İli Örneği) [Perceptions of primary school teachers about the effects of inservice training (inset) programs (A case study: Düzce)]. *Bolu Abant İzzet Baysal University Journal of Faculty of Education,* 6(2), 141-160.

Polya, G. (1973). *How to solve it: A new aspect of mathematical method* (2nd ed.). Princeton, NJ: Princeton University Press.

Pugalee, D. K. (2001). Writing, mathematics, and metacognition: Looking for connections through students' work in mathematical problem solving. *School Science and Mathematics*, *101*(5), 236-245.

Sarkar Arani, M. R., Keisuke, F., & Lassegard, J. P. (2010). "Lesson Study" as professional culture in Japanese schools: An historical perspective on ele-

mentary classroom practices. *Japan Review*, *22*, 171–200.

Schunk H. D. (2009). *Öğrenme teorileri*, Çev.: Muzafer Şahin, Ankara. Nobel Yayınları.

Veenman, M. V. J., Kok, R., & Blöte, A. W. (2005). The relation between intellectual and metacognitive skills at the onset of metacognitive skill development. *Instructional Science*, *33*, 193–211.

Yarema, C.H. (2010). Mathematics teachers' views of accountability testing revealed through lesson study. *Mathematics Teacher Education and Development, 12*(1), 3-18.

Yayan, B. (2010). *Student and teacher characterıstıcs related to problem solvıng skılls of the sıxth grade turkısh students*. (PhD Diss.), The Graduate School of Natural and Applied Sciences of Middle East Technical University, Ankara.

Yorulmaz, M. (2006). *İlköğretim birinci kademesinde görev yapan sınıf öğretmenlerinin yansıtıcı düşünmeye ilişkin görüş ve uygulamalarının değerlendirilmesi (Diyarbakır ili örneği) [An Evaluation of primary school teachers views and practices on classroom guidance (A case of Diyarbakır)]*. (Unpublished Master Thesis), Fırat University, Elazığ.

Yoshida, M., & Jackson, W., C. (2011). Ideas for developing mathematical pedagogical content knowledge through lesson study. In L, C, Hart., A. Alston and A. Murata (Eds.), *Lesson study research and practice in mathematics education* (pp, 279- 288), Dordrecht, The Netherlands: Springer.

Yurdugül, H. (2005). *Ölçek geliştirme çalısmalarında kapsam geçerligi için kapsam geçerlik indekslerinin kullanılması*. XIV. Eğitim Bilimleri Kurultayı, Pamukkale Üniversitesi, Denizli.

Watanabe, T. (2005). Knowlegeable others: *What are your roles and how do you become more effective? An Invitation to lesson study: A Facilitator's Guide-Hnadout 13.1 translating lesson study for a US*. 07 September 2012, educationnorthwest.org/webfm_send/821.

Werhoef, N. C., & Tall, D. O. (2011). Lesson study: The effect on teacher's professional development. In Ubuz, B.(Ed.). *Proceedings of the 35 th Conference of the International for the Psychology of Mathematics Education*, 4, 297 – 304, Ankara, Turkey.

CHAPTER 9

TUTORING AS A FACTOR AFFECTING THE FORMATION OF ACADEMIC AND PROFESSIONAL QUALITIES1[1]

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1 ∗ This article was produced from the author's doctoral thesis titled «The Role of Counseling Activity in Improving the Academic Success and Vocational Preparation Quality of University Students»

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Introduction

Every individual wants to fulfill his needs and develop own innate potential. Despite the fact that luck and coincidences are important in human life, the correct use of learning methods and effective lesson preparation with the desire and ability to achieve success also plays a very important role (Yılmaz, 2004, p.164). The society in its turn tries to help individuals to fulfill the qoals through education (Kuzgun, 1997, p.24).

Tutoring in tertiary education is an counseling tool that helps each student individually, and also guides students in solving difficulties arising within the framework of their relations with the higher education institution and other people. Tutoring service helps students to successfully solve their professional training, social activities, individual entrepreneurship and other social problems. Taking into the consideration that there are not enough professional tutors in higher schools and that teachers are also trainers, we can mention that the counseling services of teachers are also a kind of tutoring activity (Pauk & Owens Ross, 2005, p.114). Another factor which makes career guidance services necessary is the increase of occupational accidents due to the rapid development of industry and technology. Considering that people who are able and skilled according to the nature of the work will be less likely to have accidents at work the importance of getting to know the individual's qualities and capabilities and preparing oneself according to the requirements of the field in which he will work in the future has increased.

In order to know a person better, it is important to determine his qualities and interests, and to search for accordance between the individual and the professional field. For these reasons, vocational guidance and vocational tutoring activities are widespread and has become a field of specialization in the modern world (Özgüven, 2012, p.145).

The tutoring assistance allows the student to know better the high school he studies, to learn the internal rules, to adapt to the social and academic environment more quickly and comfortably, to reveal and develop his personal qualities, self-confidence, to increase the opportunities for making the right choice, and has a positive effect on the acquisition of qualities and necessary skills required for his profession. In ideal tutoring depending on qualitative education, the tutor is a means and qualitative education is the goal. Research study about the tutoring has shown that differences in classrooms have a certain influence on success, as well as the differences in student characteristics. In the study, it was observed that a teacher who is successful in one classroom may be unsuccessful in another class (Slavin, 2003, p.132).

Innovations related to tutoring services in tertiary education, based on

existing conditions arose a need for university tutoring centers to be able to effectively perform their functions in 9 main service areas, readjust the principles of operation based on the standards determined by the "International Association of Psychological Consulting Services" (IACS) (Boyd & Hattauer, 2003, p.168).

For becoming an information society, students should be taught the behavior rules in accordance with the requirements of the information society. This can be possible only with proper education. Education consists of learning and teaching experiences that follow each other and complement each other (Fidan ;& Erden, 1998, p.60).

Nowadays when it is very difficult to keep up with the rapid development in the field of information and technology, the mission of education is great in helping the individual to adapt to this development. Educational programs and training plans given to students in tertiary education should be determined in advance. Professors and tutors should give students theoretical and practical information provided by the program systematically (Erden, 1998, p.50).

According to teachers, in order to be able to work effectively and be successful in their work, devoting more time to students, seeing what is happening in the classroom by personally, and being in regular contact with students should be very important features for administrators (Balcı, 1993, p. 28). Active study should include how the student learns, how to remember, how to motivate himself and how to control his individual learning (Weinstein, 1986, p.73).

The students' study preparation level is accepted as a criterion in terms of determining whether or not the target behaviors are implemented at any level, and it is also accepted as a unit of measurement in terms of determining their specialization. It is the duty of the educational system to make the right decision about their future, to direct the student to professions according to their interests and abilities, based on the results obtained by evaluating their behavior and success inside and outside the audience (Silah, 2003, p.103).

Tutoring plays a great role in identifying, preventing and correcting the factors that negatively affect their scientific achievements within the current education system, which helps to achieve the desired result in terms of the formation of students' behavior rules. There are many physical, psychological and social factors that affect their academic achievements. Here, 22 options are provided in the questionnaire designed to assess the influence of the individual, teacher, family, educational institution and environment on student achievement.

Three of the questions presented in the survey are aimed at obtaining personal information about students, and the other questions are aimed at determining the level of influence of factors such as individual, teacher, family, management, academic care and environment that affect the success of students, and the appropriate option for them is expressed in the form of "I agree". they were asked to do. The survey with the participation of 657 students regarding the factors affecting students' achievements was conducted by random sampling among students.

Table 1: The gender distribution of the students participating in the survey is as follows:

Gender	**Number**	**%**
Female	326	49.6%
Male	331	50.4%

Table 2: The distribution of respondents by faculties is as follows:

Faculty	**Number**	**%**
Economics and management	258	39.3%
Engineering	136	20.7%
Pedagogical	263	40%

The ratio of the participants in the survey according to the faculties was directly proportional to the total number of students of the faculties. In the term when the survey was conducted, the ratio of students studying at the bachelor's level by faculty was Pedagogical faculty 40%, Economics and Management faculty 39.3%, Engineering faculty 20.7%.

Table 3: The distribution of the respondents by class was as follows:

Class	**Number**	**%**
1	170	25.9%
2	189	28.7%
3	**171**	**26.1%**
4	127	19.3%

The impact of individual reasons on students' following achievement as: inability to choose the speciality they want, inappropriate faculty to

their skills, interests and moral values, the necessity to work after school due to the financial problems, a fear of not being able to find a job after graduation, unawareness of the lesson learning methods, and fear of not being able to communicate with teachers and classmates, not being able to succeed despite working hard, exam anxiety and health problems has been studied

Table 4: According to the students, individual reasons that prevent them from achieving success.

Variants	Number	%
I am very excited at the exams	113	17,2
I can't be successful because of my personal problems which I can't tell to anyone	82	12,5
I do not believe that I will find a job in my field after graduation (lack of motivation)	172	26,2
I'm very distracted in classes, I can't listen well	130	19,8
I don't find the lesson interesting	154	23,5
Conclusion	651	99,2

When evaluating the responses to this survey, it was found that 17.2% of students were very excited about exams, 12.5% had personal problems that they could not share with anyone, 26.2% did not have enough motivation for classes because they thought they would not be able to find a job in their specialty after graduation, 19.8%- 23.5% of them said that they could not listen well because they were distracted in classes, and 23.5% mentioned that classes were not interesting as a reason that prevented them from succeeding. According to the obtained data, we can mention that the majority of students think that personal reasons have a more or less influence on their failure. This shows that the students are not able to solve some of their problems by themselves, and the necessary support in solving their problems is not at the required level.

Another factor that affects student achievement is the teacher factor. Many of the teachers, while carrying out their pedagogical activities, communicate closely with their students, teach them scientific knowledge and moral values and concepts, get to know their family situation, and do not spare their help as close friends and advisors [Həsənov & Ağayev, 2007, p.450). While the positive behaviors demonstrated by the teacher in the classroom and the communication established with the students have a positive effect on their success, (Kayaalp, 2002, p.183) the teacher's strict

regime and strict behavior in the classroom, his inability to communicate with students, his indifferent approach to their problems, his bias towards weak students, misusing pedagogic methods, skimming over topics that are unclear to students, not repeating lessons when necessary, and not being able to control the audience hinder students' achievements.

In the research conducted to determine the teachers' opinions about the reasons affecting student achievement 5 questions have been asked, and the students' answers to these questions were as follows.

Table 5: Teacher-related reasons that prevent students from achieving success:

Variants	Number	%
The teacher does not come prepared to the lesson	30	4.5
The inability of the teacher to arouse interest in the subject	83	12.6
The inability of the teacher to explain the lesson as clearly as possible	72	10.9
The student's inability to have a good relationship with the teacher	64	9.7
The teacher's inability to use teaching methods effectively	81	12.3
Conclusion	330	50.7

While evaluating the answers to the questions presented in the survey,we see that 4.5% of the students said that the teacher did not come to the lesson prepared, 12.6% said that the teacher could not create interest for the subject, 10.9% said that the teacher could not explain the lesson in an understandable way, and 9.7% said that the teacher could not communicate well with the students, and 12.3% of them mentioned the teacher's inability to effectively use pedagogic education methods as a factor affecting their success. Therefore, 2/4 of the students said that teachers were the reason for their failure. These statistics show that the teacher's behavior in the classroom and lack of communication with the students, along with factors such as the lack of motivation and the teacher's failure to come prepared to the lesson, and the inability to explain the lesson as clearly as possible, also prevent students from succeeding academically and professionally.

One of the student' achievement influencing factors is the family. The family, which is the most important part of society, has a very important role in the formation of student behavior. Every parent endures certain difficulties and tries to do his best for the healthy and happy growth of his child. From the first days of education, mutual relations between the school and the family are established, and these business and useful relations bring them closer to each other (Həsənov & Ağayev, 2007, p.448).

From the child' birth many factors, as upbringing, education, financial situation, separation of parents, studying away from the family, communication within the family, have a negative effect on student achievement. For this reason, the close participation of parents in the upbringing of the child, the orientation of educational influences to a single channel, the presence of clarity of thought in the upbringing of the young generation, the systematic, consistent and uninterrupted conduct of upbringing work, respect for the child's personality, mutual respect and kindness between parents will create a healthy environment for upbringing (Həsənov & Ağayev, 2007, p.448).

The tertiary education administrations' activities are also factors affecting student achievement. Thus, their decisions and attitudes affect students indirectly, if not directly. Many factors, such as statutes, disciplinary rules, social activities planning, teaching process organization, break hours, exam time and periods between exams, which form the organizational structure of university, are among the factors that directly or indirectly affect the students' success. University leaders instead of applying restrictive or prohibitive norms, should create an opportunity for students' wishes and desires to be realized without conflicting with the goals of the university with student-indexed and more lenient norms, so that the research on the role of management in the development and success of students, the leadership of administrators in the development of education and the success of students shows that it is an important factor. Managerial leadership is not limited only to the rector, but also covers the heads of many structural units operating in a university. Active administrators spend most of their time concerned with educational issues. Such administrators see their individual "roles" in the school as educational leaders. One indicator of educational leadership is to achieve effective organization of all activities in the institution in the direction of educational development.

The results of the research conducted by university tutors in the direction of students' abilities, academic achievements, professional development, interests, motivation levels and personal problems will permit for better organization of teaching and learning activities, the use of more appropriate pedagogical methods and the organization of various activities. This will authorize the tutoring services to better convey the activities, goals and rules of the university or faculty to parents and the public, will make it possible for the public to better understand educational activities, and will create conditions for increasing their relationship and support with the educational institution.

In the research conducted to determine students' opinions about the management of the institution affecting student achievement, students were asked 5 questions and the answers to are below.

Table 10: Perceptions of Institutional Management Factors Affecting Student Achievement

Variants	Number	%
Lack of teaching laboratories	39	5.9
Lack of scientific activities related to my specialty	82	12.4
Lack of activities in the direction of practical experience	108	16.4
Failure to timely information about changes and innovations related to students	26	3.9
Lack of tutoring services	97	14.7
Conclusion	352	53.3

The answers to the questions presented in the survey were evaluated in this way - 5.9% of the students said that the educational laboratories were insufficient, 12.4% said that the scientific activities related to their specialization were insufficient, 16.4% said that the opportunities for practical experience were insufficient, and 3.9% were aware of the innovations and changes related to the students in a timely manner and 14.7% stated that insufficient tutoring services affected their achievements. The survey shows that the administration' support for students and teachers' success in their activities is important.

One of the important factors in student achievement is the environment. Based on the concept of "Show me your friend, I'll tell you who you are", we can say that the environment plays an important role in the student's failure. The social environment is constantly changing and updating. In this environment, a person is not passive, but active, and in the process of activity, he constantly changes his environment. When the social environment is chosen correctly, the natural possibilities of the personality are opened and developed (Paşayev & Rüstəmov, 2007, p. 77).

In student's academic failure every responsible ones blame each other. Against the academic failure, which is a significant problem that affects students' development, the administrators of education propose such measures as giving students the right to recovery and re-examination, or making internal legal norms more flexible and interpreted (Anderson, 2009, p. 76).

The formation of the preparation awareness for the lesson, and the use of the right effective methods which plays an important role in academic achievement, will allow success in both student and employment activities.

Another factor that affects student achievement is the ability of effective use of free time. During the university years, students have enough time to ensure their academic, professional and personal development. In

order to be successful in any profession, it is very important to understand the concept of time and adjust it correctly. This habit, which directly affects student achievement, must be taught and acquired in the student's education process. These habits will enable the student to use every phase of his life effectively and will play a significant role in his achievement.

The proper use of learning strategies is very important for individuals to adapt to innovations in a developing and changing world, especially to have timely information about the innovations and changes related to their specialties. In the concept of modern education with a student index, the ability to obtain the necessary information, the correct and efficient use of the obtained information depends on the conscious study of the available information (Mayer, 2001, p. 33).

Learning strategies that facilitate the student's self-learning, include the necessary methods to understand and assimilate the meaning of the information presented to them during the teaching-learning process or individually, through a mental process, affect the individual's learning not only from a scientific, but also from an emotional point of view, directs students to learn the correct information and keeps the learning process under control (Özer, 1993, p.61).

Facilitating and enhancing learning through learning strategies can make learning permanent.

The lack of information at the root of students' inability to use learning strategies effectively makes it more important to teach learning strategies to all students in the educational process. This can really boost the self-confidence of students who have difficulty learning or who have not acquired the effective study habits necessary for learning. This will help to eliminate the thinking of students that "I can't succeed even if I try." (Pressley, Harris, 1990, p. 87).

In this direction, teachers have a very important task of acquisition of the effective learning habits and lesson preparation for new students. However, teachers usually advise their students to "work hard" rather than teaching them how to study effectively. This is not so sufficient and effective in terms of meeting the learning needs of students (Özer, 1993, p.43).

The success of students in modern education largely depends on their awareness of their own learning methods and their proper orientation to individual learning. This shows how important learning strategies are for students and teachers (Senemoğlu, 2003, p.34).

The individual differences between students make it necessary to organize education taking these differences into account. In this process, the importance of the concept of effective classroom management (tutoring)

should not be overlooked. The common feature of various definitions given about education is that it is a set of activities carried out with the aim of changing behavior and forming new behaviors. Education is the first step towards the formation of learning behavior. Diplomas (documents) are an indicator of people's education levels, and behavior is an indicator of their learning levels.

Tutoring is the management of the student's school life as an orchestra and the provision and continuation of the necessary opportunities and processes, learning order, environment, and rules to create an environment in which the learning process is realized. Minimization of the factors that hinder the work of teachers and students, the correct distribution of time in education, ensuring the participation of students in certain activities, the management of funds, human resources and time available in the auditorium.

The first stage of the tutoring activity is made up of issues related to the physical conditions of the audience. We can especially mention issues such as the size of the classroom (auditorium), the ability to divide the auditorium into sections for the purpose of organizing various events, heating, light, sound devices, colors, cleanliness, teaching aids, seating system, dividing students into groups.

The main purpose of improving the physical conditions is to ensure the comfort of the student in the class, to further increase the interest of the student in his classes and the educational institution, to ensure that the student is involved in the educational institution on his own accord. The change in activity that we call "education" must be carried out under appropriate conditions.

The third stage is focused on correct timing. Effective education depends on sufficient and succesful use of time allocated for study. The time spent in the auditorium for various activities, preventing monotony, ensuring that the majority of the student's time spent in the educational institution, in the auditorium, preventing absenteeism and dropping out of school can be managed at this stage.

The fourth stage of tutoring activity is making relationships. At this stage, the internal rules and laws of the auditorium should be mastered by students, relationship between students and between students and professors should be formed. This stage forms the basis for the next stage

The fifth stage consists of behavior rules. Issues such as the fact that the audience environment is a place where positive behaviors are formed, identifying and preventing problems before they arise, ensuring compliance with internal rules and laws in the audience, and eliminating negative

behaviors are resolved at this stage.

The question of valuing leisure time is irrelevant as long as it is not valued in terms of "student development". It is meaningless to evaluate free time activities carried out in the direction of goals that do not provide any financial or moral benefit to the academic, professional and personal development of the student. Neither the individual nor the society in which he lives can develop in a healthy way. In Table 7, in order to measure the effect of effectively valuing leisure time on student achievement, students were asked 4 questions about how they value their leisure time, and the students' answers to these questions were as follows.

Table 11.

Variants	**Number**	**%**
Not participating in scientific activities related to my specialty	112	17.0
Not participating in student association activities	185	28.1
Working on jobs related to my specialty in my free time from classes	97	14.7
Not using the library enough	68	10.3
Conclusion	462	70.1

The answers to the questions presented in the survey are evaluated in this way: 17% of the students do not participate enough in scientific activities related to their major, 28.1% do not participate in the activities of student associations, 14.7% do not participate in activities related to their major during their free time from classes, and 10.3% that adequate use of libraries and information centers is important for academic and professional achievement indicates the need for professional assistance to students on how to use their leisure time more effectively.

Tutoring is a very difficult process that requires multi-directional and long efforts.

Within the current tutoring concep, it was observed that tutors perform the function of delivering information to the relevant management bodies, not making decisions about problems. It has been seen that tutoring services in higher education institutions are not managed by a specially qualified department, but directly by the management of the institution. Although this situation is understood as tutors being directly supported by the university management, in fact, we believe that it would be more useful to provide tutoring services through a special tutoring center to be established at the educational institution.

Tutoring services in tertiary education should be provided by the tutoring center operating within the university through professional tutors. The main purpose of tutoring services should be to help students in planning their educational life correctly, to guide them in academic, social and cultural matters, and to help in the formation of a student as a personality from a mental, physical, social and psychological point of view.

REFERENCES

Erden M. Öğretmenlik Mesleğine Giriş, İstanbul: Alkım Yayınları, 1998, s.214.

Silah M. "Üniversite Öğrencilerinin Akademik Başarılarını Etkileyen Çeşitli Nedenler Arasından Süreksiz Durumluk Kaygısının Yeri ve Önemi", Eğitim Araştırmaları Dergisi, 10, 2003, 102-115 s.

Həsənov A., (2007). Ağayev Ə. Ə. Pedaqogika, Bakı: Nasir, , 493 s.

Kayaalp İ.(2002). Eğitimde iletişim dili, İstanbul : Bilge Kültür Sanat, 208 s.

Paşayev Ə., Rüstəmov F.(2007). Pedaqogika, Bakı: Nurlan, 464 s.

Yılmaz H.(2004). Öğretimde planlama ve değerlendirme, Konya, Çizgi kitabevi, 481 s.

Anderson J. R.(2009). Cognitive psychology and its implications, New York: Worth Publishers, 469 p.

Mayer, R.E. (2001). What good is educational psychology? The case of cognition and instruction. Educational Psychologist, 36, , 83-88

Özer B.(1993). Öğretmen adaylarının etkili öğrenme ve ders çalışmadaki yeterliliği, Eskişehir: Anadolu Üniversitesi Yayınları, , 63 s.

Pressley M., Harris K.R.(1990). What We Really Know About Strategy Instruction, Educational Leadership, 31-35 p.

Senemoğlu N.(2003). Gelişim öğrenme ve öğretim: Kuramdan uygulamaya, Ankara: Gazi Kitabevi, 598 s.

Yılmaz H.(2004). Öğretimde planlama ve değerlendirme, Konya, Çizgi kitabevi, 481 s.

Kuzgun Y.(1997). Psikolojik danışmanlık ve rehberlik. Ankara: y.y, 219 s.

Heppner P.P. (1983). Holding up the mirror: Research on the roles and functions of counseling centers in higher education, The Counseling Psychologist, 11, 81-98 p.

Pauk W., Owens Ross J.Q.(2005). How to study in College? New York: Houghton Mifflin Company, 342 p.

Özgüven İbrahim E.(2012). Psikolojik Danışma ve Rehberlik, Ankara: PDREM yayınları, 431 s.

Slavin Robert E.(2003). Educational psychology: theory and practice, Boston: Pearson Education, 614 p.

Boyd V., Hattauer E.(2003). Accreditation standards for university and college counseling centers, Journal of Counselig and Devolopment , 81, 168-171 p.

Fidan N., Erden M.(1998). Eğitime Giriş, İstanbul: Alkım yayınları , 229 s.

Balcı A.(1993). Etkili okul: kuram, uygulama ve araştırma, Ankara: Ankara Üniversitesi Eğitim Fakültesi, 100 s.

Weinstein C.E., Mayer R.E.(1986). The Teaching of Learning Strategies, Handbook of Research on Teaching, New York: Macmillan Company, 315-327 p.