International Studies *in* EDUCATIONAL SCIENCES

March 2025

EDITOR

DOÇ. DR. OKAN SARIGÖZ

SERÜVEN YAYINEVİ

Genel Yayın Yönetmeni / Editor in Chief • Eda Altunel

Kapak & İç Tasarım / Cover & Interior Design • Serüven Yayınevi

Birinci Basım / First Edition • © Mart 2025

ISBN • 978-625-5552-66-2

Serüven Yayınevi / Serüven Publishing
Türkiye Adres / Turkey Address: Kızılay Mah. Fevzi Çakmak 1. Sokak
Ümit Apt No: 22/A Çankaya/ANKARA
Telefon / Phone: 05437675765
web: www.seruvenyayinevi.com
e-mail: seruvenyayinevi@gmail.com

Baskı & Cilt / Printing & Volume
Sertifika / Certificate No: 42488

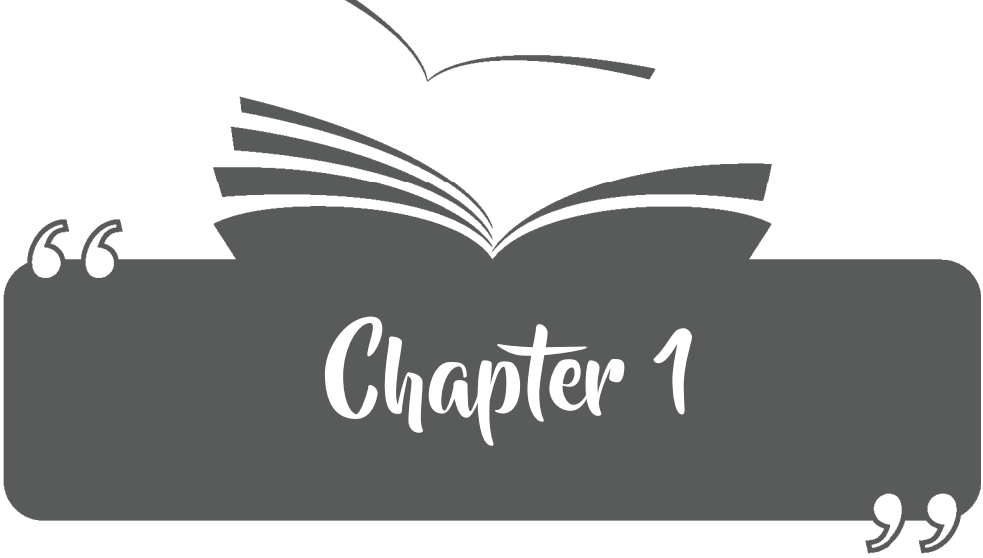
INTERNATIONAL STUDIES *in* EDUCATIONAL SCIENCES

EDİTÖR

DOÇ. DR. OKAN SARIGÖZ

SERÜVEN YAYINEVİ

CONTENTS



TEACHERS & GRADUATE EDUCATION

Okan SARIGÖZ[1]

1 Doç. Dr. Hatay Mustafa Kemal University, Faculty of Education, Antakya, HATAY okan. sarigoz@gmail.com ORCID NO: 0000-0002-1616-9789

Introduction

In the current era, often referred to as the information age, knowledge in various fields, including educational sciences, is continuously updated (Sarıgöz, 2024a). Traditional practices and beliefs in the field of education are being questioned, educational practices are discussed from multiple perspectives, and research findings aimed at enhancing various dimensions of the education-teaching process are shared. Education is a multifaceted process that begins within the family and continues through institutions, as well as teacher-student relationships. According to Kavcar (2002), quality and effective education is provided by qualified teachers. Therefore, the most critical component of the education system is the teacher, and it can be stated that "a school is only as good as its teachers." Unless having competent and genuine teachers is recognized as a fundamental issue in education, expecting education to contribute meaningfully to societal progress is merely wishful thinking. In any country, without adequately empowered and qualified teachers or a strong teaching profession, even the best educational systems and the highest educational objectives cannot be achieved (Akyüz, 2010).

Institutions that train teachers equip teacher candidates with essential skills under three main categories: specific subject knowledge, general cultural education, and professional training. Newly recruited teachers are expected to share classroom practices with colleagues, plan educational activities at the school and course level, promote active student participation in lessons, foster higher-order learning among students, and identify and propose solutions to various problems encountered on the job. It is of great importance for teachers to continue their professional development after completing their undergraduate education in order to specialize, enhance their qualifications, stay informed about innovations in education, and implement them in classroom settings (Alabaş, 2011: 2897). Graduate studies serve as a guiding framework for enabling teachers' professional and personal development, turning school and classroom practices into research topics, and sharing the results (Sarıgöz, 2024b).

During the development process, the most critical responsibility lies with highly qualified human resources. Training such human resources requires a robust graduate education system, which is particularly vital for underdeveloped and developing countries. Therefore, it is essential to place adequate emphasis on graduate education and address the issues faced in this area (Sevinç, 2001). Graduate education represents a pivotal stage in cultivating academics and scientists who will drive advancements in science and technology for the future of a nation. Like every stage of education, graduate education is characterized by its dynamic nature. This

dynamism is driven by advancements in science and technology, which continuously reshape education (Türker, 1996).

Karakütük (1999) identified the factors contributing to the development and increasing importance of graduate education as follows: the rapid advancement of science and technology and the university's critical role in this process; the growing demand for faculty members due to rising enrollment rates in higher education; the inclusion of research activities among universities' core functions; the increasing need for highly qualified human resources in national development; the preference for graduate-educated individuals in labor markets; the extension and broader accessibility of basic education; and the accumulation of knowledge and rapid technological advancements necessitating continued education even after completing higher education. Similarly, Varış (1972) articulated the primary objective of graduate education as training highly qualified human resources, such as scientists and faculty members, to meet national needs and conducting research aimed at addressing national issues and achieving technological progress. The significant mission ascribed to graduate education underscores the necessity of establishing a robust foundation for its implementation.

Graduate education not only offers individuals opportunities for academic careers but also contributes to enhancing their qualifications in their current professional roles. These programs provide participants with the means to advance within the academic sphere while also equipping them to become more competent and proficient in their professional endeavors. By deepening individuals' knowledge and skills, graduate education enables them to become more competitive in both academic and professional domains. For those aspiring to academic careers, graduate education offers opportunities to engage in research, produce publications, and actively participate in academic communities. Conversely, for professionals in the workforce, graduate education facilitates acquiring in-depth expertise in their fields and enhancing their professional competencies (Wisker et al., 2019; Boneva et al., 2022). In summary, graduate education is a multifaceted process that provides significant advantages in both academic and professional contexts, playing a critical role in helping individuals achieve their career objectives and enhancing their effectiveness in the workplace.

With the continuous advancement of scientific definitions and progress in science, the demand for academics trained through graduate education has been steadily increasing. In many countries, a master's degree is considered a mandatory prerequisite for academic training. Consequently, graduate education holds significant importance for advancing science

and ensuring high-quality education in higher education institutions. According to the Council of Higher Education (YÖK) data, a detailed analysis of graduate education statistics from the last decade reveals the following trends regarding student numbers and patterns in Turkey: In the 2022-2023 academic year, a total of 6,950,142 students were enrolled in higher education institutions across the country. Of these, 6,204,078 were studying at state universities, 735,433 at foundation universities, and 10,631 at foundation vocational schools. Regarding new enrollments, 1,846,654 students registered at universities in the 2022-2023 academic year, with 1,620,688 of them enrolling at state universities, 221,494 at foundation universities, and 4,472 at foundation vocational schools. In terms of graduates, during the 2021-2022 academic year, a total of 903,673 students graduated from higher education institutions. Among these graduates, 773,325 were from state universities, 127,957 from foundation universities, and 2,391 from foundation vocational schools. Concerning faculty members, there were a total of 184,566 teaching staff in the 2022-2023 academic year, of whom 154,981 were employed at state universities, 29,338 at foundation universities, and 247 at foundation vocational schools (YÖK, 2022). These data highlight the growth and development of graduate education in Turkey, with the increase in the number of students and faculty members at state universities being particularly noteworthy. Additionally, foundation universities have also played a significant role in this progress.

Özmenteş and Özmenteş (2005) emphasized that the quality of the graduate education process is critical for an effective and productive academic career. They highlighted that students' needs, expectations, and perspectives shape their success and pointed out that any negativity experienced during this process can have adverse effects on their achievements. Consequently, they stressed the importance of evaluating the process not only from the perspectives of those designing and implementing the program but also from the students' viewpoints. Addressing the challenges encountered during this process based on the perspectives of master's students, who represent the future of academia, is therefore of great importance.

The literature on graduate education generally focuses on the challenges faced by master's or doctoral students during this process. Sevinç (2001) identified and categorized the challenges arising in graduate education. These challenges were grouped into sub-themes, including faculty members, foreign language proficiency, advisors, and financial difficulties. Başer, Narlı, and Günhan (2005) aimed to identify the challenges faced by teachers pursuing graduate education and developed solutions for these difficulties. Their study sought to uncover the problems faced

by teachers through surveys and interviews. Savaş and Topak (2005) conducted a study addressing the expectations and motivations of students pursuing graduate education. Similarly, Sayan and Aksu (2005) carried out a qualitative study on the challenges and expectations of individuals pursuing graduate education without being academic staff members. Li and Seale (2007) conducted interviews with advisors and graduate students, presenting a micro-analysis of these discussions.

Many studies have highlighted the problems related to thesis advising in master's programs. These studies frequently mention issues stemming from communication gaps between master's students and their advisors. In this context, the literature contains numerous studies aimed at identifying the challenges encountered in graduate education. However, it is equally important to examine the strategies developed by individuals to overcome these challenges and determine whether these strategies are effective. Based on this, recommendations can be made to those intending to pursue graduate education, contributing to addressing existing problems. This plays a critical role in improving current challenges. Therefore, conducting this research is expected to contribute significantly to the literature. Within this framework, the present study aims to identify the challenges, adversities, and limitations experienced by teachers pursuing graduate education, as well as to shed light on all such aspects of their learning journey.

1. Challenges Faced by Teachers During Their Graduate Studies

Graduate education, a process that supports teachers' professional development, offers numerous advantages but also brings along various challenges and limitations. Within this context, while graduate education contributes to teachers' professional growth, it can also present difficulties that negatively impact their educational journey and work-life balance (Aktan, 2020).

For teachers actively working, balancing academic responsibilities with professional commitments is often challenging. Managing full-time teaching duties while attending graduate programs can disrupt work-life balance and lead to feelings of burnout. Time management emerges as a significant issue, particularly for teachers with demanding work schedules (Gürün et al., 2023; Aktan, 2020). Such challenges in the educational process can adversely affect teachers' professional development trajectories. Additionally, financial obligations associated with graduate education constitute another critical concern (Baldan & Güven, 2018). The costs of graduate programs can strain teachers' economic conditions, negatively impacting their motivation. Instances where teachers pause or abandon

their graduate education due to financial concerns are frequently highlighted in the literature. Another limitation of graduate education is that it does not always align directly with the current professional needs of teachers. While teachers expect graduate programs to offer more practical knowledge relevant to classroom practices, some programs' focus on academic research may fail to meet these expectations (Flores, 2005). Moreover, the theoretical knowledge provided during graduate education is expected to directly enhance teachers' practical skills; however, this relationship is not always sufficiently robust.

In conclusion, while graduate education significantly contributes to teachers' professional development, its challenges and limitations should not be overlooked. Supporting teachers' professional development processes is critical for ensuring sustainable progress in both academic and professional domains.

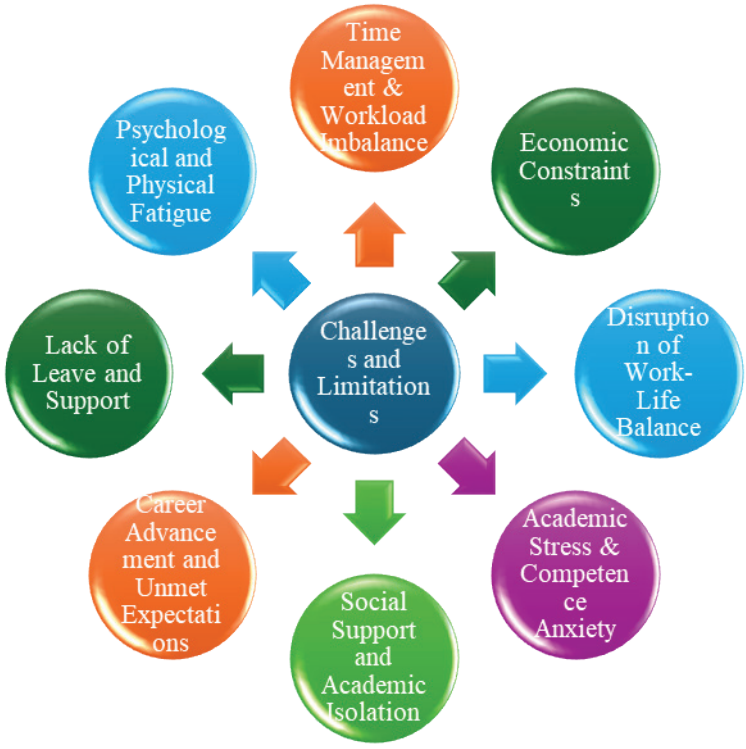


Figure I. Challenges and limitations faced by teachers during graduate studies

During their graduate education, teachers encounter numerous challenges and limitations, including time management and workload imbal-

ance, economic constraints, disruption of work-life balance, academic stress and competence anxiety, lack of social support and academic isolation, unmet career advancement and expectations, insufficient leave and support, and psychological and physical fatigue.

1.1. *Time Management and Workload Imbalance*

Issues with time management and workload imbalance can negatively affect not only teachers' work-life balance but also their personal health and psychological well-being. Particularly with an increasing workload, it has been observed that teachers experience decreased efficiency at work and feelings of inadequacy in performing fundamental tasks such as lesson planning and assessment (Kyriacou, 2001). This situation not only hinders teachers' academic success but also reduces their professional motivation and teaching quality (Yavaş, 2022). Indeed, teachers' inability to effectively manage their time may limit their effectiveness in educational processes, adversely impacting both their own and their students' success (Richards, 2012). Teachers can get out of this negative situation with the positive support they perceive from the administrators and or colleagues in the institution they work for (Hacicaferoglu et al., 2016).

One of the primary challenges teachers face during graduate education is time management. Daily workload, lesson planning, student assessments, and teaching responsibilities are activities that teachers must manage alongside their academic work. Full-time working teachers often struggle to allocate sufficient time for their academic studies, which can negatively impact their academic success. Specifically, time-consuming activities such as research, writing articles, and working on a thesis—integral components of graduate programs—make it difficult for teachers to balance their professional and academic responsibilities (Kılınç et al., 2020; Koşar et al., 2020; Oluk & Çolak, 2005).

1.2. Economic Constraints

Graduate programs bring significant economic challenges for teachers. Particularly, graduate programs at private universities can impose a considerable financial burden on teachers. This financial strain is not limited to tuition fees but also includes additional costs such as research materials, participation in academic conferences, and access to resources required for literature reviews (Karadağ & Öztürk, 2020). Moreover, considering the low salaries of teachers, facing financial difficulties during their graduate education process is inevitable (Çelik & Kahraman, 2020; Karaman & Bakırcı, 2010).

Economic constraints severely hinder teachers' ability to continue their graduate education and maintain their motivation throughout the process. The literature highlights that the financial difficulties teachers encounter while pursuing academic education negatively affect their commitment to the educational process (Özmen & Aydın Güç, 2013). The financial sacrifices teachers make to participate in graduate programs often result in difficulties in meeting daily living expenses and, in some cases, force them to take on a second job. These additional financial burdens not only negatively impact academic success but also affect teachers' personal well-being and professional satisfaction, making it challenging for them to complete their education (Bayar & Çelenk, 2019).

1.3. Disruption of Work-Life Balance

Another significant challenge faced by teachers pursuing graduate education is the difficulty in maintaining work-life balance. The demands of a full-time teaching role, coupled with the academic responsibilities of graduate studies, can negatively affect teachers' social and family lives (Töre & Miyanyedi Şen, 2022). This situation may lead to burnout and a decline in professional motivation. Additionally, the stress and time pressure experienced by teachers can hinder their ability to fulfill family responsibilities, ultimately lowering their overall quality of life.

Disruption of work-life balance creates various challenges in both the professional and personal lives of teachers. The increased academic obligations and intense workload during graduate education can severely limit teachers' social interactions and family activities. During this process, teachers constantly strive to balance academic success with family responsibilities, often leading to heightened levels of stress and anxiety. The inability to sustain a work-life balance reduces teachers' job satisfaction and negatively affects their overall psychological well-being. The literature emphasizes that failure to achieve this balance results in decreased professional performance and, in the long term, leads to burnout (İzki, 2019).

1.4. Academic Stress and Competence Anxiety

Another significant challenge encountered during the graduate education process is the stress and anxiety teachers experience regarding their academic skills. Tasks such as conducting research, writing academic papers, and evaluating scientific studies can present a substantial burden, particularly for teachers with limited academic experience (Torun Ateş et al., 2023). This burden can sometimes be directed towards psychological stress (Hacicaferoglu & Hacicaferoglu, 2022). Insufficient knowledge of academic writing conventions, data analysis, and research methodologies

heightens teachers' academic anxiety levels, which, in turn, can negatively affect their academic performance.

Academic stress and competence anxiety are among the primary factors that adversely influence teachers' academic performance and overall motivation during their graduate studies (Camadan et al., 2013). Specifically, a lack of proficiency in research methods, data collection, and analysis techniques may cause teachers to feel inadequate during this process. As a result of academic anxiety, teachers may face greater difficulties during their graduate education, fear making mistakes in research and writing processes, and consequently develop a tendency to postpone these tasks. Such anxieties not only negatively impact teachers' academic success but also undermine their commitment to graduate education.

1.5. Social Support and Academic Isolation

The lack of social support systems during graduate education is another prominent limitation for teachers. Teachers, caught between professional responsibilities and academic work, may experience academic isolation, and the inability to find adequate social support can negatively affect their motivation. Support from both their families and academic circles during this process plays a crucial role in the successful completion of graduate programs (Kılınç et al., 2020).

Teachers striving to balance professional and academic obligations may become distanced from their social circles and experience feelings of isolation (Sarıgöz, 2024c). Social support provided by colleagues, advisors, and family members can help reduce teachers' levels of stress and anxiety, thereby positively contributing to their academic success. Moreover, it has been emphasized that teachers who do not feel isolated within academic communities are more motivated and more likely to successfully complete their graduate education (Başer et al., 2005).

1.6. Career Advancement and Unmet Expectations

Teachers often pursue graduate programs with the goal of advancing their careers (Öztürk & Dinç, 2016). However, the failure to achieve anticipated promotions or salary increases after completing graduate education can negatively impact their motivation. This situation, especially for teachers who have made significant financial and time investments in their graduate studies, can lead to disappointment.

When teachers begin graduate education, they expect to enhance their professional skills, gain better career opportunities, and be financially rewarded. For some teachers, graduate education is seen as a mandatory

step to maintain and advance their current professional positions. However, when the tangible benefits of graduate education fall short of expectations, it can increase professional burnout and disappointment among teachers (Sarıgöz & Çermik, 2012; Yavaş et al., 2021). The needs, expectations, and general attitudes of teachers participating in this process will undoubtedly play a critical role in shaping their success (Özmenteş & Özmenteş, 2005). Such disappointments may also diminish teachers' interest in and commitment to future professional development opportunities.

1.7. Lack of Leave and Support

Despite the Ministry of National Education's guidelines on leave, some teachers face insufficient support and leave permissions from administrative authorities during their graduate studies (Sayan & Aksu, 2005). This situation poses challenges for teachers in continuing their academic careers. A lack of administrative support can hinder teachers' ability to attend classes and conduct research. Additionally, some schools lack incentive policies to encourage teachers to pursue graduate education, which emerges as a significant limitation. According to Gül and Dikbaş (2023), providing the necessary support to teachers within the scope of graduate education is of great importance.

The lack of leave and administrative support prevents teachers from dedicating sufficient time to their academic studies, makes it difficult for them to attend classes, and creates various challenges that negatively affect their academic success. The literature emphasizes that the absence of administrative support is one of the most critical factors limiting teachers' professional development processes. Specifically, the lack of incentivizing policies from management to promote teachers' academic progress further exacerbates these challenges (Başer et al., 2005). When teachers' requests for leave and support from administrative authorities during their graduate studies are not met, their motivation for professional development is also adversely affected. Such structural limitations can hinder teachers from advancing in their careers and achieving professional growth opportunities.

1.8. Psychological and Physical Fatigue

The intense workload and academic responsibilities associated with graduate studies can lead to burnout among teachers (Çelik & Kahraman, 2020). This condition adversely affects both their professional performance and quality of personal life (Teyfur & Çakır, 2018). Working under constant stress reduces teachers' motivation and may lead to various health issues. Similarly, long working hours and insufficient rest can significantly diminish teachers' productivity.

The combination of workload and academic demands creates both mental and physical exhaustion among teachers. Such burnout severely lowers teachers' motivation and negatively impacts their professional performance. Working under persistent stress can result in substantial declines in job satisfaction and productivity. Moreover, extended working hours and inadequate rest periods harm teachers' academic success and personal quality of life, potentially causing physical health problems.

2. Positive Experiences of Teachers During Graduate Studies

Graduate education provides teachers with a valuable opportunity to enhance their professional knowledge and skills while enabling them to become more specialized individuals in the field of education. Throughout this process, teachers can deepen their pedagogical and subject knowledge, approaching educational processes from a scientific perspective. Graduate education allows teachers to develop critical thinking skills, design more effective teaching strategies, and integrate these strategies into classroom practices. There are numerous positive reasons for teachers to pursue graduate education, which contribute to both their personal growth and professional performance. This process not only enhances their expertise but also enables them to adopt innovative and evidence-based approaches in their teaching practices, benefiting both their careers and their students.

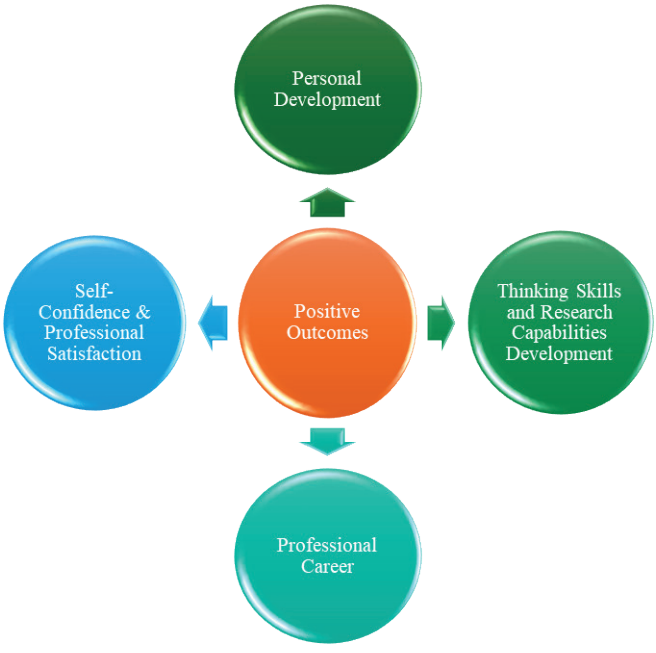


Figure II. Positive outcomes experienced by teachers during graduate studies

The positive reasons for teachers to pursue graduate education include personal development, improving thinking skills and research capabilities, self-confidence and professional satisfaction, and advancing their professional careers.

2.1. Personal Development

One of the most fundamental benefits of graduate education is the opportunity to deepen knowledge and skills (Babayiğit, 2019; Sevim & Akın, 2021). Teachers have the chance to further explore the knowledge acquired during their undergraduate education and specialize in their fields. This process allows them to gain a deeper understanding of contemporary teaching methods, educational technologies, and pedagogical innovations.

In the context of personal development, graduate education enhances teachers' critical thinking, problem-solving, and research skills (Alhas, 2006). These abilities enable teachers to be more effective and efficient in educational processes while structuring their teaching methods in a more innovative and scientifically grounded manner. Through graduate programs, teachers not only expand their professional knowledge base but also develop their academic self-confidence. This, in turn, supports their active participation in decision-making processes within their profession and empowers them to have a voice in educational policies. Furthermore, teachers who engage in research projects and scientific studies can develop more analytical approaches to addressing educational challenges and design educational strategies that better meet their students' needs. Graduate education supports teachers' personal development (Aküzüm, 2016) while also reinforcing their lifelong learning skills, thus creating a foundation for continuous improvement.

2.2. Development of Thinking Skills and Research Capabilities

Another significant benefit of graduate education is the enhancement of critical thinking and research capabilities (Dikici et al., 2023). Graduate programs improve teachers' research skills and enable them to develop scientific solutions to problems encountered in the field of education (Gürel, 2020). This allows teachers to address professional challenges with a more analytical perspective.

During graduate studies, teachers move beyond being mere consumers of existing knowledge and develop an attitude geared toward creating new knowledge. This process enables teachers to systematically analyze problems encountered in education and propose scientifically grounded solutions. Skills such as research methodologies, data analysis, and literature

review empower teachers to critically evaluate educational practices and develop innovative approaches (Çıkrıkçı & Demirtaşlı, 2002; Alhas, 2006; Toprak & Taşğın, 2017). Additionally, the skills acquired during graduate education allow teachers to contribute constructively and problem-solve not only within their classrooms but also across the broader education system. Consequently, teachers' individual professional development and their contributions to the educational system become more profound.

2.3. Professional Career

Graduate programs provide in-depth knowledge and skills that significantly contribute to professional development (Aküzüm, 2016). These programs enable teachers to assume more qualified and specialized roles in their career paths. Additionally, graduate education enhances academic and theoretical knowledge levels, which fosters better understanding and analytical thinking abilities in professional environments. Graduate programs offer opportunities to develop research skills and analytical capabilities, enhancing teachers' ability to solve complex problems and effectively analyze data. A graduate degree provides a competitive edge in the job market, as employers tend to prefer candidates with advanced degrees due to their deeper knowledge and expertise.

A graduate degree increases opportunities for career advancement and promotion. It boosts the likelihood of being appointed to higher positions with more responsibilities and better salary packages. Graduate programs also provide opportunities for networking and establishing professional connections. Teachers can interact with academics, industry professionals, and fellow students, building valuable professional relationships. Additionally, completing a graduate program enhances self-confidence. Possessing deeper knowledge and expertise enables individuals to express themselves with greater confidence in the workplace and professional settings.

Graduate programs foster innovation and creativity, providing opportunities to develop new ideas, solve problems, and create innovative solutions. They also allow individuals to connect with students from diverse sectors and fields of expertise, thereby expanding their professional networks and facilitating connections across various industries. Furthermore, graduate programs support personal development, helping individuals gain self-awareness, enhance leadership skills, and set personal goals. The positive effects of graduate education on one's career help individuals stand out in the professional world and advance their careers. For teachers, graduate studies contribute significantly to career progression (Yağız & Bozkurt, 2022). The increase in academic titles and qualifications can

enable teachers to transition into managerial positions or pursue academic career paths. Furthermore, graduate education allows teachers to play a more effective role in contributing to education policies, developing curricula, and shaping the future of education.

2.4. Self-Confidence and Professional Satisfaction

Graduate education enhances teachers' self-confidence and professional satisfaction. Graduate programs provide individuals with opportunities to deeply develop their knowledge and skills, which significantly boosts their confidence. Acquiring more knowledge strengthens the ability to solve complex problems, enabling individuals to act with greater self-assurance in the workplace. Specifically, the research and analytical skills gained during graduate education help individuals overcome challenges encountered in their professional environments more effectively, further reinforcing their self-confidence.

In terms of professional satisfaction, a graduate degree allows individuals to take on more fulfilling and meaningful roles in their careers. Graduate education equips individuals with in-depth expertise in their fields, contributing to their competence and effectiveness at work. Employers often perceive employees with graduate degrees as more valuable and capable, which translates into better job opportunities and career advancement. Such advancements enhance job satisfaction for individuals. Additionally, the professional networks and connections established during graduate programs aid individuals in advancing their careers. These networks open doors to new job opportunities, projects, and collaborations, which contribute to greater satisfaction and success in their professional journeys (Akay Tahmaz, 2019).

In conclusion, the positive effects of pursuing graduate education on self-confidence and professional satisfaction help individuals lead more successful and fulfilling careers in both their personal and professional lives. This process not only boosts individuals' self-confidence but also allows them to feel happier and more satisfied in their work. Possessing a broader knowledge base strengthens teachers' in-class performance and enables them to use more creative and innovative methods in their educational processes. This not only contributes to teachers' professional satisfaction but also positively impacts their students' achievements (Ceylan et al., 2023).

REFERENCES

Akay-Tahmaz, E. (2019). *Lisansüstü eğitim alan öğretmenlere ilişkin yönetici tutumları.* (Yayınlanmamış yüksek lisans tezi). Pamukkale Üniversitesi Eğitim Bilimleri Enstitüsü, Denizli.

Aküzüm, C. (2016). Okul yöneticilerinin ve öğretmenlerin eğitim yönetimi programı bağlamında lisansüstü eğitime bakış açılarının incelenmesi. *EKEV Akademi Dergisi, 67*, 85-108.

Aktan, O. (2020). Öğretmenlerin kariyer gelişimi açısından lisansüstü eğitimin değerlendirilmesi. *Yükseköğretim ve Bilim Dergisi, 10*(3), 596-607.

Akyüz, Y. (2010). *Türk eğitim tarihi, M.Ö. 1000 – M.S. 2010.* PEGEM Akademi.

Alabaş, R. (2011). Social studies teachers' conception of postgraduate education preferences and its contribution to their professions. *Procedia-Social and Behavioral Sciences, 15,* 2897- 2901.

Alhas, A. (2006). *Lisansüstü eğitim yapmakta olan milli eğitim bakanlığı öğretmenlerinin lisansüstü eğitime bakış açıları (Ankara ili örneği).* (Yayınlanmamış yüksek lisans tezi). Gazi Üniversitesi, Eğitim Bilimleri Enstitüsü, Ankara.

Babayiğit, Ö. (2019). Sınıf öğretmenliği bilim dalında yüksek lisans yapma nedenlerinin incelenmesi. *International Journal of Eurasian Education and Culture, 4*(6), 6-19.

Baldan, B., & Güven, M. (2018). Graduate education in teachers' professional development: Curriculum and instruction doctoral program. *Cukurova University Faculty of Education Journal, 47*(1), 1-36.

Başer, N., Narlı, S., & Günhan, B. (2005). Öğretmenlerin lisansüstü eğitim almalarında yaşanan sorunlar ve önerileri. *Buca Eğitim Fakültesi Dergisi,* (Özel Sayı 1, Lisansüstü Eğitim), 129-135.

Bayar, A., & Çelenk, M. (2019). Sınıf öğretmenlerinin lisansüstü eğitimine ilişkin görüşleri. *Çağdaş Yönetim Bilimleri Dergisi, 6*(2), 225-237.

Camadan, F., Kahveci, G., & Yavaş, T. (2013). Analysis of the relation between perfectionism and negative automatic thoughts with structural equation model. *The Anthropologist, 16*(1–2), 273–283.

Ceylan, S., Ceylan, E., Kılıç, Z., & Kurt, M. (2023). Öğretmenlerin eğitim yönetimi alanında yüksek lisans yapma nedenleri. *Ulusal Özgün Eğitim Araştırmaları Dergisi, 1*(1), 90-108.

Çelik, O.T., & Kahraman, Ü. (2021). Göreve yeni başlayan öğretmenlerin yaşadıkları güçlükler. *Pamukkale Üniversitesi Eğitim Fakültesi Dergisi, 51*, 179–205. Doi: https://doi.org/10. 9779/pauefd.684913

Çıkrıkçı-Demirtaşlı, N. (2002). Lisansüstü eğitim programlarına girişte lisansüstü eğitimi giriş sınavı (LES) sonucunun ve diğer ölçütlerin kullanımına ilişkin bir tarama. *Ankara Üniversitesi Eğitim Bilimleri Fakültesi Dergisi, 35*(1-2), 61-70.

Dikici, T., Yasdıkcıoğlu, T. K., Gündeyerli, B., & Polatlı, Ş. (2023). Okul yöneticilerinin lisansüstü eğitimine yönelik görüşleri. *Ulusal Eğitim Dergisi*, *3*(6), 961-975.

Gül, İ., & Dikbaş, E. (2023). Eğitimcilerin lisansüstü eğitim almalarına ilişkin öğretmen ve yönetici görüşlerinin incelenmesi. *Uluslararası Eğitim Bilim ve Teknoloji Dergisi, 9*(1), 40-55. Doi: https://doi.org/10.47714/uebt.1141620

Gürel, R. (2020). DKAB öğretmenlerine göre lisansüstü eğitim: Tercih sebepleri, süreçler, sorunlar ve beklentiler üzerine nitel bir araştırma. *Eskişehir Osmangazi Üniversitesi İlahiyat Fakültesi Dergisi, 7*(12), 131-170.

Gürün, E., Görmüş, M., Bulut, M., Durulmuş, M., Taçyıldız, A., & Doblan, İ. (2023). Eğitim yönetimi alanında yüksek lisans yapmanın öğretmenlik mesleğine etkileri. *International Social Sciences Studies Journal,* 9(112), 7365-7373. Doi: http://dx.doi.org/10.29228/sssj.70634

Hacicaferoglu, S., Hacicaferoglu, B., & Selcuk, M. H. (2016). Examination of colleague, school administration and job satisfaction relations of physical education and sports teachers. *The Online Journal of Recreation and Sports*, *5*(4), 33-44.

Hacicaferoglu, B., & Hacicaferoglu, S. (2022). Eğitim bilimleri açısından yıldırma (Mobbing). *Mustafa Kemal Üniversitesi Eğitim Fakültesi Dergisi*, *6*(9), 79-87.

İzki, Ö. (2019). Öğretmenlerin iş aile yaşam dengesinin performanslarına etkisi (Yayımlanmamış Yüksek Lisans Tezi). *Sabahattin Zaim Üniversitesi Sosyal Bilimler Enstitüsü, İstanbul.*

Ives, G., & Rowley, G. (2005). Supervisor selection or allocation and continuity of supervision: Ph.D. students' progress and outcomes. *Studies in Higher Education, 30*(5), 535–555.

Karakütük, K. (1999). *Lisansüstü öğretimde örgütlenme modelleri ve Türkiye'deki Uygulamalar.* 6. Ulusal Sosyal Bilimler Kongresi, 17–19 Kasım, Ankara.

Karaman, S., & Bakırcı, F. (2010). Türkiye'de lisansüstü eğitim: Sorunlar ve çözüm önerileri. *Sosyal Bilimler Araştırmaları Dergisi,* 2, 94–114.

Kavcar, C. (2002). Cumhuriyet döneminde dal öğretmeni yetiştirme. *Ankara Üniversitesi Eğitim Bilimleri Fakültesi Dergisi, 35*(1-2), 1-13.

Kılınç, A.Ç., Karahalilöz, O., & Bektaş, F. (2020). Lisansüstü öğrenim görmek: Öğretmen deneyimleri üzerinden fenomenolojik bir çözümleme. *Uluslararası Türkçe Edebiyat Kültür Eğitim Dergisi, 9*(4), 1755-1774.

Kyriacou, C. (2001). Teacher stress: Directions for future research. *Educational Review, 53*(1), 27-35.

Koşar, D., Er, E., & Kılınç, A. (2020). Öğretmenlerin lisansüstü öğrenim görme nedenleri: Nitel bir araştırma. *Mehmet Akif Ersoy Üniversitesi Eğitim Fakültesi Dergisi*, 53, 370-392.

Li, S., & Seale, C. (2007). Managing criticism in Ph.D. supervision: A qualitative case study. *Studies in Higher Education, 32*(4), 511–526.

Oluk, S., & Çolak, F. (2005). Milli eğitim bakanlığına bağlı okullarda öğretmen olarak çalışan lisansüstü öğrencilerinin karşılaştıkları bazı sorunlar. *DEÜ Buca Eğitim Fakültesi Dergisi,* (Özel Sayı 1), 141-144.

Özmen, Z.M., & Aydın-Güç, F. (2013). Doktora eğitimi ile ilgili yaşanan zorluklar ve baş etme stratejileri: Durum çalışması. *Yükseköğretim ve Bilim Dergisi,* 3, 214-219.

Özmenteş, G., & Özmenteş, S. (2005). Buca eğitim fakültesi müzik eğitimi anabilim dalı yüksek lisans öğrencilerinin lisansüstü eğitimden beklentileri ve yüksek lisans programı ile ilgili görüşleri. *Buca Eğitim Fakültesi Dergisi,* (Özel Sayı 1: Lisansüstü Eğitim), 247-255.

Öztürk, F., & Dinç, H. (2016). Lisansüstü eğitim alan müzik öğretmenlerinin eğitimleri sürecinde karşılaştıkları sorunlar. *İdil Dergisi, 21*(5), 505-520. Doi: http://dx.doi.org/10.7816/idil-05-21-15

Richards, J. (2012). Teacher stress and coping strategies: A national snapshot. *The Educational Forum, 76*(3), 299-316.

Sarıgöz, O. (2024a). Continuity and quality in education: The career development process of teachers. 16th Internatıonal Conference on Social Sciences, December 20-22, Van. Erişim adresi: https://openaccess.mku.edu.tr/server/api/core/bitstreams/459188da-f137-40d0-a8f9-66fbc1b48a91/content

Sarıgöz, O. (2024b). An examination of teachers' preferences for postgraduate education. ERPA International Congresses on Education, September, 13-15, Balıkesir. Erişim adresi: https://openaccess.mku.edu.tr/server/api/core/bitstreams/5de9628d-0ac0-4782-80ab-e0b0eeb077f2/content

Sarıgöz, O. (2024c). The inner dynamics of transformation in education: Distance education. ERPA International Congresses on Education, September, 13-15, Balıkesir. Erişim adresi: https://openaccess.mku.edu.tr/server/api/core/bitstreams/f5a08258-4384-466a-9f9e-13b55395aca5/content

Sarıgöz, O., & Çermik, Y. (2012). Maslow'un tükenmişlik ölçeği ile MYO öğrencilerinin tükenmişlik düzeylerinin belirlenerek değerlendirilmesi. *Eğitim ve Öğretim Araştırmaları Dergisi, 1*(2),116- 122.

Savaş, B., & Topak, E. (2005). Lisansüstü öğrenim gören öğrencilerin beklentileri ve lisansüstü öğrenimi talep etme gerekçeleri. *Buca Eğitim Fakültesi Dergisi,* (Özel Sayı 1: Lisansüstü Eğitim), 145-154.

Sayan, Y., & Aksu, H. (2005). Akademik personel olmadan lisansüstü eğitim yapan bireylerin karşılaştıkları sorunlar üzerine nitel çalışma: Dokuz Eylül Üniversitesi-Balıkesir Üniversitesi. *Dokuz Eylül Üniversitesi Buca Eğitim Fakültesi Dergisi*, 17, 59-66.

Sevim, F.Ö.M., & Akın, U. (2021). Öğretmenlerin mesleki gelişimlerinde lisansüstü eğitimin rolü: Mezun olmak yeterli mi? *Eğitim ve Bilim*, *46*(207), 483-510.

Sevinç, B. (2001). Türkiye'de lisansüstü eğitim uygulamaları, sorunlar ve öneriler. *Ankara Üniversitesi Eğitim Bilimleri Fakültesi Dergisi, 34*(1), 125-137.

Teyfur, M., & Çakır, R. (2018). Lisansüstü eğitime devam eden öğretmenlerin karşılaştıkları sorunlar. *Journal of Turkish Studies, 13*(19), 1745-1764.

Toprak, E., & Taşğın, Ö. (2017). Öğretmenlerin lisansüstü eğitim yapmama nedenlerinin incelenmesi. *OPUS Uluslararası Toplum Araştırmaları Dergisi*, *7*(13), 599-615.

Torun-Ateş, Z., Telli, B., Aras, T., & Beyaztaş, H. (2023). Lisansüstü eğitim yapan öğretmenlerin yaşadığı sorunlar, *International Academic Social Resources Journal, 8*(50), 2862-2870. Doi: http://dx.doi.org/10.29228/ASRJOURNAL.70606

Töre, E., & Miyanyedi-Şen, F. (2022). Öğretmenlerin iş yaşam dengesi ile mesleki bağlılık düzeyleri arasındaki ilişki. *Akademik Platform Eğitim ve Değişim Dergisi, 5*(1), 55-74. Doi: https://doi.org/10.55150/apjec.1061953

Türker, K. (1996). *Türkiye'de üniversite, bilim ve teknoloji politikaları. 2. üniversite kurultayı – bildiriler,* Sarmal Yayınevi.

Wisker, G., Robinson, G.D., & Leibowitz, B. (2019). The purpose and impact of postgraduate knowledge. Studies in Graduate and Postdoctoral Education, 10(3), 160-172. Doi: https://doi.org/10.1108/SGPE-05-2019-0054

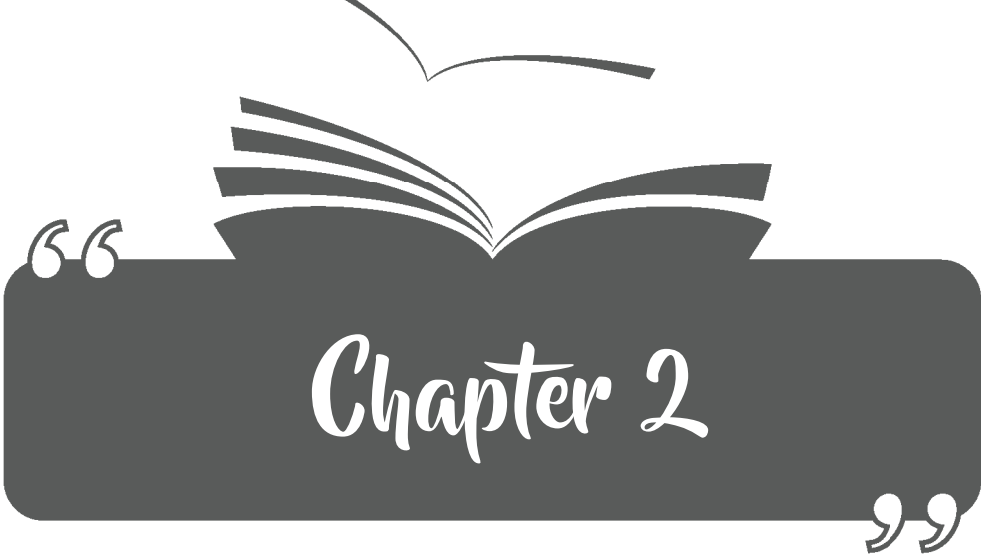
Varış, F. (1972). *Türkiye'de lisansüstü eğitim: Pozitif bilimlerin temel ve uygulamalı alanlarında.* Ankara Üniversitesi Eğitim Fakültesi Yayınları, No: 23.

Yağız, A., & Bozkurt, A. T. (2022). Eğitim yöneticisi ve öğretmenlerin eğitim yönetimi alanında tezsiz yüksek lisans yapma nedenlerinin incelenmesi. *ISPEC International Journal of Social Sciences & Humanities*, *6*(2), 260-276.

Yavaş, T. (2022). The effect of self-efficacy beliefs of school administrators on sustainable leadership characteristics. *Education Quarterly Reviews, 5*(2), 306–320.

Yavaş, T., Aygün, B., & Ulak, H. (2021). Türk milli eğitim sisteminin amaçladığı insan profili: Maslow'un ihtiyaçlar hiyerarşisi temelinde bir değerlendirme. *Sosyal Bilimler ve Eğitim Dergisi, 4*(1), 42-56.

Yükseköğretim Kurulu (YÖK). (2022). YÖK Yükseköğretimde yeni istatistikler www.yok.gov.tr adresinden alınmıştır.



EXAMINING THE ATTITUDES OF SECONDARY SCHOOL STUDENTS TOWARDS TECHNOLOGY IN TERMS OF DEMOGRAPHIC AND ACADEMIC FACTORS

Pınar DEMİR[1], Güneş UĞRAŞ[2], Enes A. BİLGİN[3]

1 Science Teacher, Erçek Mehmetçik Secondary School, 0000-0002-8151-7364, pinardemirr7@gmail.com
2 Dr. Computer and Educational Technologies Education Department, Yuzuncu Yil University, 0000-0003-3938-1333 gunesugras@yyu.edu.tr +90.534.836.3797
3 Assoc. Prof. Mathematics Education Department, Yuzuncu Yil University, 0000-0003-3003-9259 enesbilgin@yyu.edu.tr

INTRODUCTION

Role of Technology in Education

The use of technology in education has the potential to increase students' academic success as well as improve their attitudes towards lessons and technology. The role of technology in education is not limited to providing students with academic success, but also enables them to develop a positive perspective towards technology. In a study conducted by (Sökmen, Sarıkaya, & Nalçacı, 2023), it was shown that augmented reality technology significantly increased primary school students' success, participation in lessons, and positive attitudes towards technology. Similarly, Mohammed, Aliyu, and Attah (2024) emphasized the positive effects of positive attitudes towards computer and internet use on the academic success of undergraduate students studying chemistry. These findings underline the dual benefits of technology: enriching learning processes and promoting positive technological engagement.

In the current era, the rapid development of science and technology has led to differences in the needs of society and increased the demand for qualified human resources (Herdem & Ünal, 2018). In this context, the need for individuals with problem solving, critical thinking, creativity, technological literacy and interdisciplinary work skills, which are called 21st century life skills, necessitates the transformation of the education system (Landivar, 2013). Due to the rapid development of technology and the differentiation of needs, traditional classroom environments have been left behind in schools, and blackboards have been replaced by computers, projectors and smart boards (Keskin Geçer, 2020). This transformation has affected the content and methodology of education and has led to the adoption of an approach that enriches students' learning experiences with technological tools.

Science Education and Current Technology

Science can be defined as an effort to understand nature and explain the events that occur in our daily lives (Ministry of National Education [MoNE], 2018). Since science education is generally related to abstract concepts, there is a need to concretize these concepts (Çepni & Ayvacı, 2006). Student-centered approaches that teach students how to learn, make them active, and increase the permanence of information while allowing students to use the information they learn in their daily lives. On the other hand, people remember 20% of what they hear, 30% of what they see, 50% of what they see and hear, 70% of what they say, and 90% of what they do and say (Yalın, 2004). Therefore, students being active in the lesson and using visual materials more will increase the efficiency of

the learning process. In this context, approaches that include technology and the use of technology are important tools in achieving these goals (İlyasoğlu & Aydın, 2014).

One of the contemporary approaches that integrates science and technology is the Computer-Assisted Instruction (CAI) Model. As traditional teaching methods are gradually replaced by computer-assisted teaching methods, this model stands out as an effective tool in educational processes. CAI increases students' interest and motivation, concretizes learning and makes it more permanent (Makransky, Petersen, & Klingenberg, 2020; Yahaya et al., 2022). This model, which allows students to adjust their own learning speed, also enriches learning processes by appealing to multiple senses (Yumuşak & Aycan, 2002). For example, complex scientific concepts are learned through interactive and visual simulations, deepening students' understanding.

The CAI Model not only provides benefits for students, but also enables teachers to use different teaching methods by accelerating lesson planning and measurement-evaluation processes (Adıgüzel, Gürbulak, & Sarıçayır, 2011). In this respect, CAI is a strong example of technology integration in education. Studies have demonstrated the potential of this model to increase academic success and have shown that CAI provides more effective learning experiences for students in disciplines such as Science.

Challenges of Technology Integration

However, in addition to the advantages offered by CAI, the negative effects of the model should not be ignored. Excessive dependence on technology can cause students to have difficulty learning without digital tools. This dependence can reduce students' learning motivation outside the classroom and make them disinterested in other learning methods (Korucu & Usta, 2016). In this context, Korucu and Usta (2016) drew attention to the fact that excessive dependence on technology can harm students' learning processes and limit their learning experiences. In addition, distraction is a common side effect of CAI. Computer and internet use, especially distracting elements such as social media and games, can cause students to have difficulty in concentrating during the lesson. In this context, studies conducted by Taşkıran (2023) and Yıldız and Elaldı (2023) emphasize that technology-based education methods have the risk of distracting students' attention and that this situation can negatively affect their learning processes. Similarly, Mensah and Ampadu (2024) stated that the use of digital technologies in education may increase distraction, but these problems can be managed with effective planning and guidance.

Another negative effect of CAI is the risk of social isolation. This model, which encourages individual work, can reduce group interactions, causing students to feel lonely and lose motivation. In addition, programs full of repetitive tasks can cause the process to become monotonous, causing students to lose interest (Gorain, Saha, Maji, & Sen, 2022). Inadequate feedback can also cause students to feel a lack of guidance. Finally, the inability of CAI to adapt to individual learning paces or styles can create a feeling of inadequacy and loss of motivation in some students (Puspitasari & Mulkiyah, 2023).

Relevance of the Study

The COVID-19 pandemic has affected many areas such as health, education, tourism and economy and has caused serious changes in our lives. During the pandemic, schools were temporarily closed and many countries resorted to digital technologies to continue education (Bakioğlu & Çevik, 2020). In this process, the Web-Based Distance Education model has come to the fore and attracted attention as an approach that facilitates students' access to information, provides instant feedback and encourages them to use technology effectively (Haşıloğlu, Durak, & Arslan, 2020). The pandemic process has enabled educational technologies to be used more and become permanent in our lives.

The rapid digital transformation experienced during the pandemic has made it important to examine students' attitudes towards technology and the effects of these attitudes on academic performance in more detail. Moving education to digital platforms has not only provided a short-term solution, but has also contributed to the shaping of future education models. Especially in disciplines such as science, the integration of technology into educational processes has positively affected students' academic success by increasing their interest in the course and enriching their learning experiences (İlyasoğlu & Aydın, 2014; Şeker & Kartal, 2017).

This process shows that technology is no longer just a tool, but also an integral part of learning processes. Therefore, positive attitudes towards technology can directly affect students' motivation and success (Gürbüzoğlu Yalmancı & Aydın, 2014). Understanding the effects of students' attitudes towards technology on their academic performance, future career choices and lifelong learning habits is of critical importance both in terms of better understanding the role of technology in today's education and in evaluating its long-term effects (Metin, Birişçi, & Coşkun, 2013).

As CAI and similar models gain prominence, it is crucial to examine how students' attitudes toward technology influence their academic success and how these attitudes vary based on demographic factors. Un-

derstanding these dynamics is essential for shaping effective educational strategies and fostering 21st-century skills such as critical thinking, problem-solving, and technological literacy.

Research Gap

While numerous studies have explored the impact of technology on academic achievement, limited research has focused on the interplay between students' attitudes toward technology, demographic characteristics, and success in Science education. This study aims to address this gap by investigating these relationships in secondary school students.

Research Questions

This study seeks to answer the following questions:

1. How do secondary school students' attitudes toward technology vary based on demographic factors such as gender, age, parental education level, and technology usage habits?

2. What is the relationship between students' attitudes toward technology and their academic success in Science classes?

By addressing these questions, the study aims to provide insights into the role of technology in modern education and its potential to enhance student outcomes.

METHOD

A. Research Model

This research was conducted based on a correlational relational screening model. Relational screening models are used to examine the existence and degree of a relationship between two or more variables. These models focus on analyzing whether variables change together and, if so, the direction and degree of this change. The study aims to determine the relationship between students' attitudes towards technology and their academic success in Science courses and to reveal the level of this relationship. In addition, the relationship between students' attitudes towards technology and demographic factors such as gender, age and the duration of access to technology was also included in the scope of the study.

B. Participants

The sample of the study consists of 70 7th and 8th grade secondary school students studying in the spring semester of 2020-2021 in different districts of Van province. The research universe consists of all secondary

school students in Van province. As a sampling model, the easily accessible sampling method was preferred from the random sampling types.

C. Data Collection Tools

To access the data of the study, the "Students' Attitude Towards Technology Scale" developed by Yurdugül and Aşkar (2008) and the Science course success grades were used. The attitude towards technology scale was prepared with a 5-point Likert type and consists of a total of 24 items and six sub-dimensions. The Cronbach Alpha reliability coefficient of the scale was calculated as 0.57 and it was developed for secondary school students (Yurdugül & Aşkar, 2008). In addition, demographic information such as the students' gender, age, place of residence and the number of years they have been using technological devices was also collected. The scale and demographic questions were transferred to the digital environment via Google Forms and the data collection tool was created in this way.

D. Data Collection

Due to the COVID-19 pandemic, data were collected online. The link to the scale form created through Google Forms was shared with students via communication tools such as WhatsApp, Telegram, Messenger and e-mail, and data were collected from volunteer participants.

E. Analysis of Data

SPSS 18 package program was used for data analysis. Data were interpreted at 5% significance level. Normality of data was assessed with Kolmogorov-Smirnov and Shapiro-Wilk tests, and appropriate test methods were determined according to these results. Correlation coefficients were calculated for relationships between variables, and descriptive statistics and percentage-frequency values were also presented.

FINDINGS

1. Normality of Data: Kolmogorov-Smirnov and Shapiro-Wilk normality tests were applied to determine the general distribution of the data. The results of these tests are given in Table 1. According to the test results, it is seen that all scales meet the normality condition.

Table 1 Normality test

	Kolmogorov–Smirnov			Shapiro-wilk		
GROUP	Statistic	Sd	P	Statistic	Sd	p
Gender						
Female	0.087	36	0.2	0.981	36	.765
Male	0.149	34	0.055	0.974	34	.582
Age						
12	0.176	16	0.2	0.948	16	.453
13	0.112	37	0.2	0.973	37	.499
14	0.209	17	0.058	0.912	17	.109
Duration of technology usage						
0	0.085	28	0.2	0.986	28	.964
1-4	0.192	23	0.058	0.938	23	.165
+5	0.202	19	0.059	0.913	19	.084
Science course grade						
0-50	0.186	10	0.2	0.935	10	.496
51-60	0.211	6	0.2	0.974	6	.915
61-70	0.238	7	0.2	0.872	7	.194
71-85	0.138	24	0.2	0.951	24	.279
86-100	0.163	23	0.118	0.957	23	.406

When we look at the normality test results in Table 1, we see that all scales meet the normality condition.

2. Students' Attitudes Towards Technology: Some responses given by students on the attitude scale towards technology are presented in Table 2. According to Table 2, it is seen that students are undecided about choosing a career related to technology. The rate of students who want to choose a career related to technology is determined as 16%, while the rate of those who will not choose a career related to technology is determined as 16%. 37% of the students are undecided on this issue.

Regarding joining a school club related to technology, 36% stated that they want to join, and 23% stated that they definitely want to join. It is seen that students think that technology courses should be given to all students. The rate of students who want to take a course related to technology is determined as 34%. Some responses given by students on the attitude scale towards technology are given in Table 2.

Table 2 Percentage distributions of some responses to the technology attitude scale

Items	I totally disagree	I disagree	I'm undecided	I agree	Totally Agree
I Will Most Likely Choose a Technology-Related Career.	16	20	37	11	16
If there was a club about technology at school, I would definitely join this club.	7	10	24	36	23
I should be able to choose technology as a course at school.	14	14	19	34	19
Your future will be bright with a career in technology.	16	31	34	16	08
Working in technology would be boring.	4	13	16	37	30
Technology is useful for the future of this country.	6	3	13	43	36
Technology is very important in life.	6	14	10	46	24
Technology should be given to all students as a course.	10	21	20	29	20
Everyone can have a job in technology.	11	24	13	40	11

3. Attitude Towards Technology According to Factors: Descriptive statistics are presented in Table 3.

- **Gender Factor:** While the average attitude of male students towards technology is 69.44%, the average of female students is 65.67%. It is seen that male students' attitudes towards technology are more positive than female students.

- **Age Factor:** The average attitude of 13-year-old students towards technology is 68.74%, which is higher than other age groups.

- **Duration of Technology Use:** Students who have used technology for more than five years have higher attitudes towards technology than other groups.

- **Science Course Success Grades:** Attitude towards technology was found to be higher in students with grades between 71-85 (71.18%).

The lowest relationship was observed in students with grades between 61-70 (62.86%).

Table 3 Descriptive statistics results

Factors	Groups			Technology Attitude Scale		
		F	%	Mean	Stn. Dev.	%
Gender	Female	36	51	78.81	13.39	65.67
	Male	34	49	83.32	12.11	69.44
Age	12	16	23	79.50	13.32	66.25
	13	37	53	82.49	14.07	68.74
	14	17	24	79.18	9.70	65.98
Duration of technology usage	0	28	40	80.93	13.82	67.44
	1-4	23	33	80.43	13.41	67.03
	+5	19	27	81.79	11.40	68.16
Grade	0-50	10	14	76.90	12.58	64.08
	51-60	6	9	83.33	11.67	69.44
	61-70	7	10	75.43	16.64	62.86
	71-85	24	34	85.42	10.44	71.18
	86-100	23	33	79.26	13.22	66.05

4. Differences in Attitudes Towards Technology by Gender: Independent Groups t-Test was applied to determine the differences between attitudes towards technology and gender factor. The results of this test are presented in Table 4. According to the test results, no significant difference was found between gender groups (t(68)=-1.478, p=.144).

Table 4 Results of the t-test conducted to determine the differences between the attitude towards technology and the gender factor

Group	N	Mean	Stn. Dev	Stn. Err	T	Df	p
Female	36	788.056	1.338.618	223.103	-1.478	68	.144
Male	34	833.235	1.211.240	207.726			

5. Attitude Towards Technology According to Age Factor: ANOVA test was applied to determine the effect of age factor on attitude towards technology. The results of this test are given in Table 5. No significant

difference was found between age factor and attitude towards technology (F(2,67)=0.517, p=.599).

Table 5 Results of ANOVA test to determine the differences between the age factor and the attitude towards technology

Age group	N	Mean	Std. Dev	Source of variation	Sum of Squares	df	Mean Squares	F	p
12	16	79.5000	13.31666	Between groups	174.286	2	87.143	.517	.599
13	37	82.4865	14.07445	Within groups	11295.714	67	168.593		
14	17	79.1765	9.69688	Total	11470.000	69			
Total	70	81.0000	12.89309						

6. Attitude Differences According to the Duration of Technology Use: The results of the ANOVA test conducted to determine the difference between the years of technology use and attitude towards technology are given in Table 6. According to the results, there is no significant difference between the duration of technology use and attitude towards technology (F(2,67)=0.057, p=.945).

Table 6 Results of ANOVA test to determine the differences between the attitude towards technology and the years of technological tool use

Duration of technology usage	N	Mean	Stn. Dev.	Source of variation	Sum of Squares	df	Mean Squares	F	p
0	28	80.93	13.82	Between groups	19,33	2	9.666	.057	.945
1-4	23	80.43	13.41	Within groups	11450.67	67	170.90		
+5	19	81.79	11.40						
Total	70	81.00	12.89	Total	11470.00	69			

7. Relationship Between Science Course Grades and Attitude Towards Technology: ANOVA test was applied to determine the relationship between Science course grades and attitude towards technology. According to the results presented in Table 7, there is no significant difference between grades and attitude towards technology (F(4,65)=1.477, p=.219).

Table 7 Results of ANOVA test to determine the differences between science course grades and attitudes towards technology

Course grade	N	Mean	Stn. Dev.	Source of variation	Sum of squares	df	Mean squares	F	p
0-50	10	76.90	12.58	Between groups	955.78	4	238.95	1.477	.219
51-60	6	83.33	10.67	Within groups	10514.22	65	161.76		
61-70	7	75.43	16.64	Total	11470.00	69			
71-85	24	85.42	11.44						
86-100	23	79.26	13.22						
Total	70	81.00	12.89						

8. Correlation and Regression Analyses: Pearson correlation analysis was conducted to determine the level of relationship between attitude towards technology and academic success in science courses (Table 8). As a result of the correlation analysis, no significant relationship was found between grades and attitude towards technology (p>.50).

Table 8 Pearson Correlation Analysis results

	N	Mean	Stn. Dev.	Stn. Err	Grade	Attitude scale	p
Grade	70	3.63	1.395	.167	.076	1.0	.533
Attitude scale	70	81.00	12.89	1.541	1.0	.076	

When Table 8 is examined, it is seen that the academic average of the 70 students participating in the study in science course is 3.63 and the average of the attitude scale towards technology is 81.00. As a result of the correlation analysis, it is seen that the p value is higher than 0.05 (r=0.076; p>.05). Therefore, it can be said that there is no significant relationship between grades and attitude towards technology.

In addition, the results of the regression analysis conducted to determine the effect of attitude towards technology on success in science course and to mathematically reveal the relationship between the dependent variables examined, it was determined that attitude towards technology was not a significant predictor of success in science course (F(1,68)=0.392 ;p>.05). The results was shown in the Table 9 below:

Table 9 Regression Analysis Findings/Anova Test Findings for Significance of the Model

Model	Sum of squares	Degree of freedom	Mean squares	F	Sig.
Regression	.770	1	.770	.392	.563
Error	133.57	68	1.964		
Total	134.34	69			

DISCUSSION AND CONCLUSION

This study aimed to examine the relationship between middle school students' attitudes towards technology and their academic success in Science courses and to determine how this relationship changes according to demographic factors. The rapid digital transformation experienced during the pandemic period has made the role of technology use in education more visible and increased the need to evaluate the effects of students' attitudes towards technology on their academic performance. The research findings revealed that there is a significant relationship between students' attitudes towards technology and their academic success in Science courses. It was determined that students' interest and motivation in technology positively affected their academic success. This result is consistent with the literature showing that technological tools support learning processes when used effectively in education.

Gürbüzoğlu Yalmancı and Aydın (2014) stated that middle school students' positive attitudes towards technology increase their academic success and that this effect is affected by factors such as the duration of students' access to technology. Similarly, Mıhladız, Duran and Yıldırım (2011) stated that primary school students' attitudes towards technology support their active participation in learning processes and that this situation is reflected in their academic success. In addition, Metin et al., (2013) emphasized that the positive attitudes of teacher candidates towards educational technologies are an important factor determining the effectiveness of technology integration. This shows that positive attitudes towards technology are critical in increasing success not only for students but also for teachers involved in teaching processes. Sökmen et al. (2023) drew attention to the effect of augmented reality technologies in increasing student participation and academic success, but emphasized the importance of limiting factors such as teacher skills, lack of infrastructure and cost in the implementation of these technologies. On the other hand, Mohammed et al. (2024) argued that positive attitudes towards computer and internet use support the academic success of students studying chemistry, but unconscious use of technology can lead to negative effects such

as distraction and addiction. In other words, the effective use of technology in education depends not only on technical skills but also on responsible and balanced use.

In addition, this study also examined the effects of demographic factors such as gender, age, and access to technology on attitudes towards technology. The study findings revealed that the relationship between students' attitudes towards technology and their success also differed according to demographic factors such as gender, age, and duration of access to technology. When the gender variable was examined, it was revealed that male students developed a more positive attitude towards technology. While this finding is similar to Gürbüzoğlu Yalmancı and Aydın (2014), different results were obtained in some studies (e.g., Mıhladız et al., 2011; Herdem & Ünal, 2018). These differences indicate the complexity of the effect of gender on attitude towards technology and that these effects may vary depending on the context. Similarly, in studies conducted on STEM education, it has been stated that gender creates complex effects on students' STEM motivation (Herdem & Ünal, 2018). The fact that there was no significant difference between the age factor and attitude towards technology indicates that age does not have a decisive effect on attitude towards technology. This result contradicts the findings in the studies of Mıhladız et al. (2011) and Gürbüzoğlu Yalmancı and Aydın (2014) and requires further examination of the effects of age on attitudes towards technology. The relationship between the duration of use of technological tools and attitudes towards technology did not show a significant difference. This suggests that prolonged exposure to technology may not always have a positive effect on attitudes. Finally, in the study conducted by Makransky et al. (2020), it was shown that virtual reality-supported learning increased students' scientific career goals and interest in lessons. Similarly, it was emphasized that augmented reality applications had a positive effect on student motivation and attitudes in teaching geometry (Yıldız & Elaldı, 2023). This shows how the effective use of technological tools can improve students' learning processes.

While these findings reveal the positive effects of attitudes towards technology on educational processes, they also draw attention to the difficulties encountered in the integration of technology into educational processes. It is recommended that supportive policies and strategies be developed for both students and teachers for the effective use of educational technologies. However, it should not be forgotten that negative effects may occur in the event of excessive use or mismanagement of technology. Therefore, it is important to carefully plan technology integration and adopt a sustainable and balanced approach.

In conclusion, this study has shown that middle school students' attitudes towards technology have a significant effect on their academic success in Science courses and that this relationship may vary according to demographic factors. The integration of technology into educational processes has the potential to increase students' academic success by supporting their motivation and learning processes. However, technology integration should be planned not only with effective usage strategies but also in a way that takes into account individual differences and contextual factors. In order to make the most of the opportunities provided by technology in education, it is important to support teachers and students with a conscious and balanced approach in this process; and to prevent negative effects such as excessive use of technology, addiction and distraction. In this context, it is recommended that educational policies be developed in a way that encourages the effective and responsible use of technology.

RECOMMENDATIONS

Based on the findings of this study, it is recommended that regular training programs and workshops be organized for teachers to develop their knowledge and skills on technology integration. In these trainings, teachers should be guided on the effective use of the Computer-Assisted Instruction (CAI) Model and the integration of technology into educational processes. In addition, the necessary supporting resources should be provided for teachers to use technology-supported teaching materials and tools effectively. This can help teachers use technology more efficiently in education.

In addition to the role of technology in education, students' social interactions and traditional learning methods should also be emphasized in a balanced way. Teaching methods should be diversified in order to prevent excessive dependence on technology. In this context, including social learning opportunities such as interactive group work, projects and face-to-face discussion sessions will support students' balanced use of technology and development of social skills.

In addition, students should be provided with personalized learning opportunities. By taking advantage of the advantages offered by the Computer-Assisted Instruction (CAI) Model, learning materials and activities appropriate to the individual needs of students should be developed. This can enable students to increase their success by participating more in the learning process.

It is important to regularly monitor and evaluate attitudes towards technology and the effects of these attitudes on students' academic success. Educational policies and practices should be designed to support

the positive development of these attitudes. In addition, feedback should be collected on students' attitudes towards technology use and this data should be used in shaping educational strategies.

Comprehensive research should be conducted to examine in more detail the effects of demographic factors such as gender and age on attitudes towards technology. These studies are important for understanding the effects of technology in education and developing different strategies based on factors such as gender and age. In particular, a better understanding of the differences in attitudes between different age groups and genders can contribute to making educational practices more inclusive and effective.

The findings obtained in this study are similar to some studies in the literature (e.g., Gürbüzoğlu Yalmancı & Aydın, 2014), while different results were obtained in some studies (e.g., Mıhladız et al., 2011; Herdem & Ünal, 2018). These differences may be due to the socioeconomic characteristics of the samples used in the studies, cultural contexts, and changes in the levels of access to technology. In addition, the effects of different research methods and data collection tools on the ways of measuring students' attitudes towards technology may also diversify these results.

Future research should examine the effects of the Computer-Assisted Instruction Model in different educational contexts more comprehensively, and its long-term effects on student motivation, social interactions, and learning retention. Additionally, studies should be conducted on how technology integration may differ across age groups and educational levels. Such research will play an important role in the development of educational policies and practices.

In addition, considering that this study was conducted in a village school in the İpekyolu district of Van province, the problems encountered by students in terms of access to technological devices emerge. Therefore, it is recommended that similar studies be conducted in central schools. Such studies may help to better understand the effects of access differences between village schools and central schools on attitudes towards technology and academic achievement.

The current study is limited to quantitative data, and the positive and negative aspects of students' attitudes towards technology have not been thoroughly addressed. Therefore, it is recommended that future studies use qualitative data collection methods (e.g., interview techniques) to examine students' attitudes towards technology more comprehensively. Qualitative data can provide a more detailed insight into students' experiences with technology and how these experiences affect their attitudes.

This study was conducted with 7th and 8th grade middle school students. Expanding the sample group can provide more comprehensive and generalizable results with studies conducted with students from different ages and grade levels. Such expanded sample studies will allow the effects on attitudes towards technology to be evaluated from a broader perspective.

In conclusion, this study provides important data for understanding the role of technology integration in education, and the additional research areas and methods suggested can lay the groundwork for a more comprehensive examination of the relationship between attitudes toward technology and academic achievement.

REFERENCES

Adıgüzel, T., Gürbulak, N., & Sarıçayır, H. (2011). Smart boards and teaching practices. *Mustafa Kemal University Journal of Social Sciences Institute, 8*(15), 457–472. [In Turkish].

Bakioğlu, B., & Çevik, M. (2020). Science teachers' perspectives on distance education during the COVID-19 pandemic. *Turkish Studies, 15*(4). [In Turkish].

Çepni, S., & Ayvacı, H. (2006). Laboratory-supported science teaching approaches. In S. Çepni (Ed.), *From theory to practice: Science and technology applications* (pp. 190–217). Ankara, Turkey: PegemA. [In Turkish].

Gorain, S. C., Saha, B., Maji, S., & Sen, S. (2022). A study on relationship and cluster analysis among internet dependency, social isolation, and personality. *International Journal of Research Publications.* Retrieved from http://www.ijrpr.com

Gürbüzoğlu Yalmancı, S., & Aydın, S. (2014). Analyzing middle school students' attitudes towards technology in terms of certain variables. *Ege Journal of Education, 15*(1), 125–138. [In Turkish].

Haşıloğlu, M., Durak, S., & Arslan, A. (2020). Evaluation of teachers, students, and parents from the perspective of science branch counselors during the Covid-19 distance education process. *International Journal of Education Science and Technology, 6*(3), 214–239. [In Turkish].

Herdem, K., & Ünal, İ. (2018). An analysis of studies on STEM education: A meta-synthesis study. *Marmara University Atatürk Faculty of Education Journal of Educational Sciences.* https://doi.org/10.15285/maruaebd.381417 [In Turkish].

İlyasoğlu, U., & Aydın, A. (2014). The effect of computer-assisted instruction on the success of science and technology teacher candidates in teaching direct current circuits. *Kastamonu Education Journal, 22*(1), 223–240. [In Turkish].

Keskin Geçer, A. (2020). The effect of using the Education Informatics Network (EBA) in science classes on the results of the middle school students' solar system and eclipses achievement test. *Journal of the Institute of Social Sciences, 15*, 117–129. [In Turkish].

Korucu, A. T., & Usta, E. (2016). The analysis of new generation mobile device dependencies of students in faculty of education. *Participatory Educational Research, 3*(1), 22–29.

Landivar, L. C. (2013). The relationship between science and engineering education and employment in STEM occupations. *American Community Survey Reports.*

Makransky, G., Petersen, G. B., & Klingenberg, S. (2020). Can an immersive virtual reality simulation increase students' interest and career aspirations in science? *British Journal of Educational Technology, 51*(6), 2079–2097. https://doi.org/10.1111/bjet.12954

Mensah, F. S., & Ampadu, E. (2024). Benefits, challenges and opportunities of using computer-assisted instruction in mathematics education. In S. Papadakis (Ed.), *IoT, AI, and ICT for educational applications* (pp. 2–13). Springer. https://doi.org/10.1007/978-3-031-50139-5_2

Metin, M., Birişçi, S., & Coşkun, K. (2013). Analyzing pre-service teachers' attitudes towards instructional technologies in terms of different variables. *Kastamonu Education Journal, 21*(4), 1345–1364. [In Turkish].

Mıhladız, G., Duran, M., & Yıldırım, M. Z. (2011). Investigation of primary school students' attitudes towards technology. *[Eksik kaynak bilgisi: Dergi/ Kaynak adı ve cilt/sayı bilgisi eklenmeli].*

Ministry of National Education (MoNE). (2018). *Science course curriculum (Elementary and middle school 3rd, 4th, 5th, 6th, 7th, and 8th grades).* Ministry of National Education. [In Turkish].

Mohammed, K. I., Aliyu, S. M., & Attah, C. O. (2024). Undergraduate chemistry education students' attitude toward use of computer and internet and its influence on their academic achievement in Kano state. *UNIZIK Journal of STM Education, 7*(1), 19–29.

Puspitasari, R. D., & Mulkiyah, U. (2023). An analysis in using learning media to increase student motivation of learning physics. *Journal Corner of Education, Linguistics, and Literature, 2*(3), 258–264. https://doi.org/10.54012/jcell.v2i3.132

Sökmen, Y., Sarıkaya, İ., & Nalçacı, A. (2023). The effect of augmented reality technology on primary school students' achievement, attitudes towards the course, attitudes towards technology, and participation in classroom activities. *International Journal of Human–Computer Interaction, 40*(15), 3936–3951. https://doi.org/10.1080/10447318.2023.2204270

Şeker, R., & Kartal, T. (2017). The effect of computer-assisted instruction on students' success in science education. *Turkish Journal of Education, 6*(1), 17–29. [In Turkish].

Taşkıran, N. D. (2023). The application of flipped classroom model from blended learning approaches in secondary school music teaching (Publication No. 30755338) [Doctoral dissertation, ProQuest Dissertations & Theses].

Yahaya, J., Fadzli, S., Deraman, A., et al. (2022). PRInK: Environmental virtual interactive based education and learning model for STEM motivation. *Educational Information Technologies, 27*, 4771–4791. https://doi.org/10.1007/s10639-021-10794-8

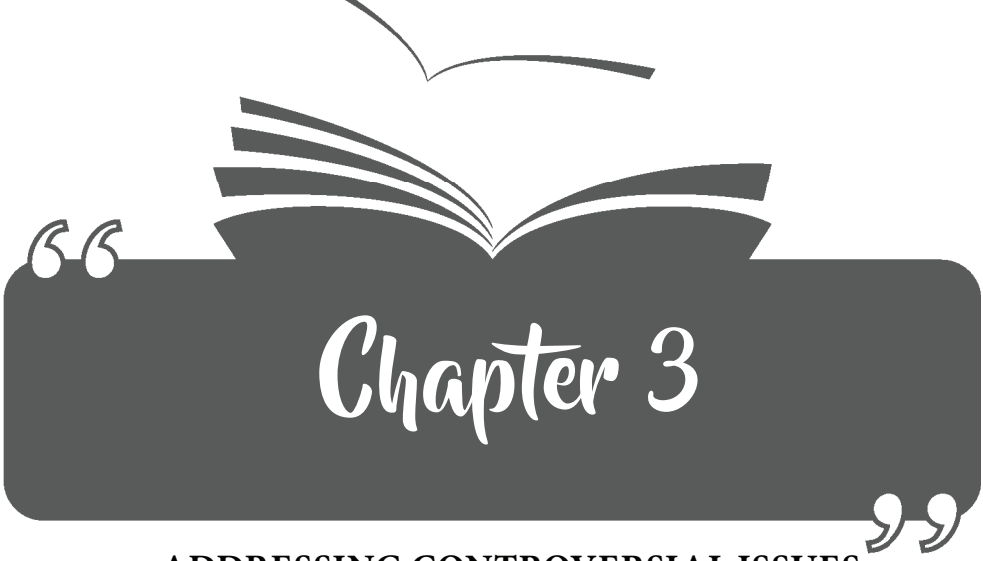
Yalın, H. (2004). *Instructional technologies and material development.* Nobel Publishing. [In Turkish].

Yıldız, S., & Elaldı, Ş. (2023). A meta-thematic analysis of studies on the use of augmented reality applications in geometry teaching. *Gaziantep University Journal of Educational Sciences, 7*(1), 70–91. [In Turkish].

Yumuşak, A., & Aycan, Ş. (2002). The benefits of computer-assisted studies in science education: An example from Demirci (Manisa). *Marmara*

University Atatürk Faculty of Education Journal of Educational Sciences, 16, 197–204. [In Turkish].

Yurdugül, H., & Aşkar, P. (2008). Analyzing the factor structures of the students' attitudes towards technology scale: The case of Turkey. *Elementary Education Online, 7*(2), 288–309. [In Turkish].



ADDRESSING CONTROVERSIAL ISSUES REGARDING EUROPEAN VALUES THROUGH DIVERSE TEACHING STRATEGIES

Duygu METİN PETEN[1], Semra SÜTGİBİ[2]

1 Associate Professor, Ege University, Department of Mathematics and Science Education, ORCID 0000-0002-4704-8605, duygu.metin.peten@ege.edu.tr
2 Associate Professor, Ege University, Department of Turkish and Social Sciences Education, ORCID 0000-0001-9613-6671, semra.sutgibi@ege.edu.tr

Controversial Issues

Addressing controversial issues in education is not just a pedagogical choice but a necessity in cultivating informed, engaged citizens. These issues, often laden with different perspectives and emotional responses, provide a crucial opportunity for students to develop critical thinking skills, empathy, and a deeper understanding of complex scientific and societal issues. By confronting controversial subjects head-on, educators not only prepare students to navigate diverse viewpoints but also empower them to contribute meaningfully to discussions that shape their communities and the collective at large. This proactive and reactive approach equips learners with the tools to analyze information critically, challenge assumptions, and construct well-informed opinions, thereby fostering a more resilient and inclusive democratic society.

Controversy, as a fundamental aspect of human interaction and societal evolution, arises from the collision of diverse perspectives, values, and interests. At its core, controversy emerges when different opinions or interpretations of events, policies, or ideologies clash. This dynamic interplay not only underscores the complexity of human discourse but also serves as a catalyst for societal change, as contentious issues compel individuals and communities to critically examine their beliefs, advocate for their positions, and negotiate collective solutions. From ethical dilemmas in medical research to debates over economic policies or environmental concerns, the nature of controversy spans a spectrum of topics that are as diverse as the societies they impact, reflecting the intricacies of human morality, cultural identity, and governance.

Controversial issues are characterized by the existence of conflicting views. These issues often touch upon sensitive societal matters, ethical dilemmas, or contentious political issues. Controversial issues are typically defined as conflicts or debates that elicit strong emotions, offer opposite explanations and solutions based on alternative ideas or values, competing interests, and hence have the potential to split society (Council of Europe[CE], 2015). Controversial issues are often referred to as issues that typically provoke significant divisions among different groups each upholding different worldviews, different explanations based on varying values and interpretations of available information (Oulton, Dillon & Grace, 2004). In society, controversies would also occur due to insufficient evidence or unpredictability regarding future outcomes, where the judgment depends on how different pieces of information are weighted or valued (Dearden, 1981).

Woolley (2011) defines controversial issues as those that require reasoned reflection, debate, and evaluation. Using the flat earth example,

which is not a controversial issue, Woolley highlights that true controversial topics must present balanced viewpoints from opposing sides. For instance, environmental problems on their own are not inherently controversial. However, framing the issue with a statement like "Many claims about environmental threats are exaggerated" can introduce controversy. As Hand (2008) acknowledged, this is an epistemic criterion, as it necessitates evaluating opinions based on evidence or arguments. Consequently, controversy emerges when rational reasoning can support each opposing view (Larsson and Larsson, 2021).

The Necessity of Making Room for Controversial Issues

Incorporating controversial issues into the curriculum is essential for fostering critical thinking, democratic engagement, and balanced understanding among young people. The Council of Europe's report, "Living with Controversy: Teaching Controversial Issues," provides well-established reasons for including these topics in the curriculum. According to the report, one of the most important rationales is that it helps cultivate key democratic citizenship skills, such as open-mindedness, curiosity, empathy, tolerance, and the ability to engage in democratic debate and resolve conflicts peacefully (CE, 2015). Similarly, Matsuda (2009) supports the idea that learning about and discussing controversial issues is crucial for developing active citizenship and effective participation in democratic governance. Additionally, Zlobina, Dávila, and Zapater (2024) provided evidence that addressing controversial issues related to social life and social justice in educational settings with Spanish university students can sensitize citizens and stimulate their active citizenship.

Another reason for incorporating controversial issues into the curriculum is to cultivate critical thinkers. Oulton et al. (2004) argue that teaching these topics helps students develop critical inquiry skills, such as analyzing arguments and reflecting critically on their own and others' viewpoints. By examining controversial issues from multiple perspectives, students challenge their own beliefs, enhance their critical thinking skills, and strengthen their inquiry and analytical abilities, which are essential for understanding complex topics (Al Badri, 2015; Westheimer, 2008). In this type of learning environment, students have the chance to explore controversial issues, allowing them to learn how to evaluate evidence, identify biases, and make reasoned judgments based on the evidence (CE, 2015).

Additionally, involving students in discussions about controversial issues, where multiple perspectives are explored, can enhance their personal and emotional growth. This helps them feel more comfortable express-

ing their views and boosts their confidence in influencing public opinion (Barton & McCully, 2007).

New controversial issues constantly emerge, and the media can sometimes handle these issues inappropriately. To better prepare students for the future, education should equip them to handle such controversial topics in an informed, rational, tolerant, and moral manner, rather than shielding them from the harsh debates of adult life. (Qualifications and Curriculum Authority,1998).

The Role of Controversial Issues in Curricula

Given the current curricula developed by Ministry of National Education (MoNE) in Turkiye, it is evident that numerous curricula across various grade levels incorporate controversial, socioscientific, and biotechnological issues that have social, political, ethical, and environmental implications. For instance, in the high school chemistry curriculum (MoNE, 2024a), students are encouraged to assess how their decisions impact scientific, technological, ethical, and sociocultural values. This involves making personal and social decisions on socioscientific issues like the synthesis and use of nanotechnological products or the application of pesticides in agriculture. They are also expected to provide multiple justifications for their opinions to enhance their critical thinking skills. Similarly, high school biology students are expected to conduct research on various biotechnological applications, such as genetically modified organisms (GMOs), cloning, new generation vaccines, embryo research, CRISPR-Cas applications, and stem cell technologies (MoNE, 2024b). They need to gather data and evidence to support their claims, evaluate whether these applications meet ethical standards, and present their findings. Moreover, the middle school science curriculum (MoNE, 2024c) aims to foster students' curiosity about socioscientific issues, encouraging them to research, question, and develop innovative solutions from an interdisciplinary perspective.

A similar trend is seen in social studies curricula. The high school history curriculum (MoNE, 2024d) highlights the importance of bringing current and controversial issues into the classroom. It encourages the use of various discussion techniques to integrate problem-solving, critical thinking, evidence-based reasoning, responsible decision-making, and research skills into learning and teaching practices. In the secondary school social studies curriculum (MoNE, 2024e), the integration of values into lessons is emphasized. Therefore, to help students internalize these values, it is important to create participatory classroom environments based on experiences where they can develop appropriate behaviors. Con-

sequently, it is recommended to use various value teaching approaches, such as value explanation, value clarification, learning through action, and moral dilemmas.

In a study involving Turkish middle school students (5th, 6th, and 7th graders), it was observed that students identified human and animal rights, multiculturalism, internet usage, freedom of the press, and the election system as controversial issues (Öztürk, 2022). Moreover, students indicated that social studies and science courses most frequently address these controversial issues. Interestingly, there was a significant difference between students with and without reading habits regarding multiculturalism, privatization, human and animal rights, and the election system, favoring those with reading habits. On the other hand, findings from a study conducted with Turkish social studies teachers revealed that they consider issues such as the education system, terrorism, congregations, religious abuse, judicial independence, and examination systems to be controversial. Furthermore, they indicated that the most frequently discussed controversial issues in their classes are democracy, environmental pollution, human rights, the internet, TV broadcasts, and violence (Kuş & Öztürk, 2019).

Based on the results of a study involving pre-service teachers from Chile, who are preparing to teach secondary History, Social Sciences, and Geography, it was found that the most significant controversial issues are human rights violations, the distribution of wealth, and the Holocaust (Iglesias, Aceituno & Toledo, 2017). On the other hand, Swedish teachers from civics, geography, history, and religion courses identified several key controversial issues, such as climate change, migration and refugee matters, genocide, nationalism, imperialism, racism, ethnicity, extremism, terrorism, Islamophobia, and freedom of religion. Interestingly, there is a significant alignment between these controversial topics and those included in the national Swedish curriculum (Larsson & Larsson, 2021). In a study conducted with beginning history teachers from England, the teachers were asked to list the most important controversial issues in both 2006 and 2016. According to the research findings, teachers in both periods identified the Arab-Israeli conflict, the holocaust, the troubles in Northern Ireland, and the use of nuclear weapons as highly controversial issues (Woolley, 2017). Moreover, Nganga, Roberts, Kambutu, and James (2020) explored the perceptions of pre-service teachers in the USA regarding controversial issues. The study's findings indicated that the most significant controversial issues identified by these pre-service teachers include cultural diversity, immigration, social justice, gender issues and sexuality, race, global climate change, and environmental conservation.

As noted, the issues deemed controversial by teachers or students can differ due to cultural or regional variations, ethnic backgrounds, or political views. Nevertheless, it is essential to create learning environments that incorporate these controversial issues, as students will need to make decisions about them in the future. Furthermore, it is important to develop strategies that promote research and data-driven discussions on these issues.

Factors Deterring Teachers from Teaching Controversial Issues

Although the importance of integrating controversial issues into the learning environment to promote critical thinking and informed citizenship is well acknowledged, many teachers still have challenges to address these topics in their classrooms. Teachers, on the one hand, have a range of concerns about teaching controversial issues. On the other hand, these concerns are quite diverse, highlighting the complexity of the issues. For example, Kuş and Öztürk (2019) provided evidence to present the problems teachers encounter while teaching controversial issues. On the one hand, the findings indicated that teachers deal with technical challenges like overcrowded classrooms, traditional seating arrangements, and external distractions. On the other hand, they also face personal challenges, such as disclosing their own stances at the beginning of a discussion, not providing well-structured arguments to students or expecting data-supported arguments from them, showing overreaction to them and poor time management.

A major obstacle for teachers when addressing controversial issues is the socio-cultural and political environment in which they operate. By presenting case studies from South Korea and Latvia, Misco (2012) illustrated how socio-cultural and political contexts profoundly influence teachers' willingness and ability to teach controversial issues (Abu-Hamdan & Khader, 2014; Kuş & Öztürk, 2019; Zimmerman & Robertson, 2017). Moreover, teachers fear that they might face negative feedback from parents, students, or school administrators. Additionally, they worry about being accused of bias or being criticized in their teaching (Oulton et al., 2004).

Another factor that impacts whether and how teachers tackle controversial issues is their level of preparedness and the instructional methods they employ. Research indicated that teachers are more likely to introduce controversial issues in the classroom if they feel adequately prepared (Divéki, 2018). Oulton, Day, Dillon, and Grace (2004) pointed out that traditional methods often fail to capture the complexity and nature of controversial issues, leaving teachers feeling unprepared. Consequently,

they suggest a new approach to teaching controversial issues, emphasizing the importance of understanding the nature of controversy, developing critical inquiry skills, and promoting open-mindedness and critical reflection among students.

According to a comprehensive review by Chen and Xiao (2021) on the challenges and coping strategies of science teachers in teaching socioscientific issues, several factors may hinder teachers from engaging effectively in the classroom. These factors include an insufficient knowledge base, lack of instructional skills and feelings of insecurity. Thus, teachers might opt to integrate socio-scientific issues as supplementary elements within the curriculum rather than making them the primary focus of lessons. In addressing these issues, teachers frequently employ teaching strategies such as class discussions, group work, questioning, and argumentation (Chen & Xiao, 2021). As a result, researchers emphasized the urgent need for teachers to have access to a diverse array of teaching strategies to navigate the challenges associated with teaching these issues. Additionally, teachers require more explicit guidance and support from education policymakers, teacher educators, and school leaders to enhance their practice.

Considering the challenges teachers face in teaching controversial issues and their pedagogical needs, Teaching Controversial Issues (TCI) project would be a suitable resource for supporting teachers' professional development and providing pedagogical guidelines in this area. Therefore, the main purpose of this book chapter is to introduce the objectives and outcomes of the TCI project. Additionally, it seeks to offer teachers from various disciplines, including science, social studies, and English, examples of lesson plans that have been developed in accordance with the project's goals.

TCI Project

The TCI project is built upon the learning outcomes of the European Values in Education (EVALUE) project, an Erasmus+ initiative completed in 2022. Information about both projects can be found on the official website: www.atlasofeuropeanvalues.eu. For detailed information on the EVALUE project, please refer to Sütgibi, Metin Peten, Amado (2024).

The TCI project, part of the Erasmus+ program, focuses on exploring and identifying suitable teaching strategies that address controversial issues, thereby promoting values communication and clarification in the classroom. The primary aim of the project is to identify the challenges teachers encounter when implementing teaching strategies in difficult classroom situations and to assess their impact on values communication and clarification.

In line with these objectives, the project initially focused on establishing the quality criteria that the selected teaching strategies must meet. Each partner country proposed different teaching strategies, and the strategies chosen from the pool were subjected to trial implementations in schools. These initial trials helped us identify suitable strategies for each partner country. After testing the pre-selected strategies during face-to-face meetings with partner teachers, teacher educators, and researchers, 12 appropriate teaching strategies were selected for the project. The teaching strategies decided upon for use in the project are: 5W1H, Chessboard, Circle Chat, Four Corners, Head-Heart-Hand, INSERT, Opinion Line, Snowball, Spiderweb, Think-Pair-Share, Values Compass, and Value Quadrant.

After translating all selected teaching strategies into Dutch, Flemish, Slovak, and Turkish, the project team trialed these strategies in at least four partner countries: The Netherlands, Belgium, Slovakia, and Turkey. These trials allowed for the evaluation of thresholds and effectiveness of the teaching strategies. Following this phase, the project team designed guides to facilitate the implementation of these strategies in classrooms. The guides are detailed and included sections such as: introduction, goals related to values communication and clarification, class context, room conditions, materials and supplies, structure of the teaching strategy (step by step), crucial points of attention and bottlenecks, topics and statements, link to values clarification and explanatory theories, short theoretical explanation, debriefing, variations and alternatives, and other aspects to consider.

These guides aim to support teachers in creating a participatory classroom environment that facilitates the discussion of controversial topics. Additionally, they provide theoretical explanations based on literature, enriching teachers' prior knowledge and helping them connect values clarification and explanatory theories.

The project website now features guides for each teaching strategy, translated into four languages. Additionally, by the project's outcomes, explanatory guidance films demonstrating the classroom application of these strategies will be available on the site. These educational resources aim to support teachers in employing diverse teaching strategies tailored to both teacher and student needs, as well as classroom dynamics, to effectively address controversial issues, promote critical thinking, and facilitate respectful discussions.

5W1H

This chapter introduces only the 5W1H strategy out of the 12 strategies and provides an exemplary lesson plan. The primary goal of this teaching strategy is to help students understand the topic more deeply, comprehensively, and from various perspectives. The acronym 5W1H stands for a set of questions (What? Where? When? Why? Who? How?) that encourages students to explore different aspects of a topic during discussions. Initially, the teacher presents the lesson's issue, and students work in small groups of three or four, depending on the class size. They answer the questions based on the 5W1H framework and record their responses or notes on a worksheet. Each group can select a spokesperson to present their discussion results to the entire class. The teacher wraps up the activity by connecting the discussion outcomes to relevant values clarification theories and data from www.atlasofeuropeanvalues.eu.

This strategy is suitable for students of various age groups. However, when choosing the topic, the students' level, cultural, political, religious, and ethical values, and curriculum objectives should be considered. Like other strategies, 5W1H requires preparation before the lesson. During this preparation, the teacher formulates questions related to the curriculum objectives that allow the topic to be discussed from multiple angles and elicit diverse responses from different participant groups. Questions should be clear enough for students to understand easily, search for answers, and discuss them. The teacher should consider the students' grade level and adapt the issue and questions accordingly. If the questions are too simple, students might give straightforward answers and lose interest. The teacher can add more complex questions, stimulate students' interest in additional information about the topic, or provide examples to guide students on how to think about the topic more deeply.

Additionally, using the maps section on www.atlasofeuropeanvalues.eu, the teacher can select maps showing the distribution of various items related to the topic, allowing broader discussion and differentiation. Background information and infographics available on the website can also be used to provide a theoretical explanation of the topic and explain why the data might differ for different participant groups based on theory. Groups are given time to answer the questions and write down their responses. It is crucial for the teacher to keep students focused, as they may become distracted while searching for answers and during group discussions. The teacher should also monitor group work to ensure equal participation and prevent some students from relying on their classmates' ideas without contributing. It is important that shy and introverted students feel comfortable expressing their thoughts, especially during group discussions.

To ensure equitable participation, the teacher can provide additional context information to increase student engagement. Group discussions can be time-consuming, so it is essential to monitor time closely to ensure all groups can share and present answers to all 5W1H questions. This teaching strategy is suitable for a wide range of topics that offer ample opportunities for generating related 5W1H questions and subsequent discussions.

Exemplary Lesson Plan

The lesson plan shared in this book chapter is designed for 6th grade science class and spans two hours. Given that the topic of the environment can be integrated into various subjects, it can be easily implemented or adapted for courses such as social studies and English. The lesson plan can be found in Appendix 1.

References

Abu-Hamdan, T., & Khader, F. (2014). Social studies teachers' perceptions on teaching contemporary controversial issues. *American International Journal of Contemporary Research*, *4*(10), 70-78.

Al Badri, S. (2015). Teaching controversial issues in the classroom. *Citizenship Education Research Journal*, *5*(1), 73–83.

Barton, K. C., & McCully, A.W. (2007). Teaching controversial issues: where controversial issues really matter. *Teaching History*, *127*, 13–19.

Chen, L., & Xiao, S. (2021). Perceptions, challenges and coping strategies of science teachers in teaching socioscientific issues: A systematic review. *Educational Research Review, 32*, 1-14.

Council of Europe. (2015). *Living with controversy: Teaching controversial issues through education for democratic citizenship and human rights (EDC/ HRE). Training pack for teachers*. Accessed February 27, 2025. https:// rm.coe.int/16806948b6(open in a new window.

Dearden, R. F. (1981). Controversial Issues and the Curriculum. *Journal of Curriculum Studies*, *13*(1), 37–44.

Divéki, R. (2018). Teachers' attitudes towards dealing with controversial issues in the EFL classroom: A pilot study. *Working Papers in Language Pedagogy*, *12*, 27–54.

Hand, M. (2008). What should we teach as controversial? A defense of the epistemic criterion. *Educational Theory*, *58*(2), 213-228.

Hand, M., & Levinson, R. (2012). Discussing Controversial Issues in the Classroom. *Educational Philosophy and Theory, 44*(6), 614–629.

Iglesias, R., Aceituno, D., & Toledo, M. I. (2017). Student teachers' understandings and practices for teaching "controversial issues" in the high school History curriculum. *Procedia- Social and Behavioral Sciences*, *237*, 452-457.

Kuş, Z., & Öztürk, D. (2019). Social studies teachers' opinions and practices regarding teaching controversial issues. *Australian Journal of Teacher Education, 44*(8), 15-37.

Larsson, A., & Larsson, L. (2021). Controversial Topics in Social Studies Teaching in Sweden. *Nordidactica: Journal of Humanities and Social Science Education, 1*, 1–21.

Matsuda, N. (2009). Citizens in the era of Governance: Citizen participation and active citizenship. *Interdisciplinary Information Sciences, 15*(2), 231–242.

Ministry of National Education. (2024a). *Chemistry Curriculum (Grades 9, 10, 11, and 12).* Retrieved from: tymm.meb.gov.tr/upload/ program/2024programkim9101112Onayli.pdf

Ministry of National Education. (2024b). *Biology Curriculum (Grades 9, 10, 11, and 12).* Retrieved from: tymm.meb.gov.tr/upload/ program/2024programbiy9101112Onayli.pdf

Ministry of National Education. (2024c). *Science Curriculum (Grades 3, 4, 5, 6, 7, and 8).* Retrieved from: tymm.meb.gov.tr/upload/program/2024programfen345678Onayli.pdf

Ministry of National Education. (2024d). *History Curriculum (Grades 9, 10, and 11).* Retrieved from: tymm.meb.gov.tr/upload/program/2024programtar91011Onayli.pdf

Ministry of National Education. (2024e). *Social Studies Curriculum (Grades 4, 5, 6, and 7).* Retrieved from: tymm.meb.gov.tr/upload/program/2024programsos4567Onayli.pdf

Misco, Thomas (2012). The Importance of Context for Teaching Controversial Issues in International Settings. *International Education, 42*(1), 69-84.

Nganga, L., Roberts, A., Kambutu, J., & James, J. (2020). Examining pre-service teachers' preparedness and perceptions about teaching controversial issues in social studies. *The Journal of Social Studies Research*, *44*(1), 77-90.

Oulton, C., Dillon, J., & Grace, M. M. (2004). Reconceptualizing the teaching of controversial issues. *International Journal of Science Education, 26*(4), 411-423.

Oulton, C., Day, V., Dillon, J., & Grace, M. (2004). Controversial Issues - Teachers' Attitudes and Practices in the Context of Citizenship Education. *Oxford Review of Education, 30*(4): 489–507.

Buket Ökten Sipahioğlu, Avrupa Birliği'nin Türkiye'ye Atık İhracatının Aşamalı Olarak Durdurulması Kararı, ATAUM Blog, Çevrimiçi Yayın, 02.05.2023, https://ataum.ankara.edu.tr/2023/05/02/blog-yazisi-43/

Öztürk, D. (2022). Controversial issues: A mixed study with middle school students. *Participatory Educational Research, 9*(4), 1-18.

Sütgibi, S., Metin Peten, D., & Amado, S. (2024). Values education; European values in education project. In İ. Daşdemir (Ed.), *Social studies teaching* (pp. 29-45). Lyon: Livre de Lyon.

Westheimer, J. (2008). On the relationship between political and moral engagement. In F. Oser & W. Veugelers (Eds.) *Getting Involved. Global Citizenship Development and Sources of Moral Values* (pp. 17–29). Rotterdam/Taipei: Sense Publishers.

Woolley, M. (2017). The attitudes and perceptions of beginning teachers in relation to teaching controversial issues in the history classroom. *Revista Electrónica Interuniversitaria de Formación Del Profesorado*, *20*(2), 1–16.

Woolley, R. (2011). Controversial issues: Identifying the concerns and priorities of student teachers. *Policy Futures in Education*, *9*(2), 280–291.

Qualifications and Curriculum Authority (1998). *Education for citizenship and the teaching of democracy in schools.* London: Qualifications and Curriculum Authority.

Zimmerman, J., & E. Robertson. (2017). The controversy over controversial issues. *Phi Delta Kappan, 99*(4), 8–14.

Zlobina, A., Dávila, M. C., & Zapater, M., B. (2024). Are Today's Young People Active Citizens? A Study of Their Sensitivity to Socio-Political Issues and Their Social Participation. *Journal of Social and Political Psychology*, *12*(1), 5-22.

Appendix 1. Exemplary Lesson Plan: How to Tackle Environmental Waste/5W1H

Learning Objectives

Ability to produce solutions for an environmental problem in the surroundings or in the country.

a) Identifies an environmental problem in the surroundings or in the country.

b) Summarizes an environmental problem in the surroundings or in the country.

c) Makes data-based predictions for the solution of an environmental problem in the surroundings or in the country.

d) Reasons through proposals for an environmental problem in the surroundings or in the country.

e) Evaluates the solution of an environmental problem in the surroundings or in the country.

Engage

To attract students' attention and activate their prior knowledge, attitudes, and thoughts about the topic, Atlas (https://www.atlasofeuropeanvalues.eu) is used. One or more map items from Atlas are presented to the students to gather their opinions. If desired, this process can be conducted using the classtool on Atlas, and data can be collected and analyzed in the classroom.

Map Items

- It is very difficult for someone like me to do much for the environment.
- There are more important things in life than protecting the environment.
- There is no point in doing what I can for the environment unless others do the same.
- Many claims about environmental threats are exaggerated.
- If I were sure that the money would be spent to prevent pollution, I would give part of my income for this purpose.

- This lesson focus on environmental problems caused by waste. Students are expected to generate ideas on tackling environmental waste. To narrow the scope, the controversial statement "There is no point in doing what I can for the environment unless others do the same" is addressed.

- After presenting the statement "There is no point in doing what I can for the environment unless others do the same," students are asked to provide at least one argument for each perspective (positive, negative, or neutral) regarding this statement.

- Then, students discuss whether having a positive, negative, or neutral opinion on this statement is influenced by demographic variables such as education level, gender, age, and region, and if so, what kind of effects these might have.

Explore

At this stage, the 5W1H strategy is applied. It aims to view ideas from various perspectives and gain a deep understanding of a particular situation.

Explanation of the activity and arranging the classroom for group work (approx. 5 min.): Students are divided into groups of three or four based on class size.

Working in small groups (approx. 15-20 min.): In the Explore phase of the 5E teaching model, students discuss a set of 5W1H questions, reflecting on the topic and noting key points on worksheets.

- **What?** question helps identify the main topic and focus on the core issue.

- **Where?** question helps pinpoint the location of the issue. This could mean a physical location or a virtual platform.

- **When?** question tackles the timing of the issue.

- **Why?** question aims to understand the reasons for the issue.

- **Who?** question helps identify the individuals or groups involved in the issue.

- **How?** question is associated with the problem-solving process.

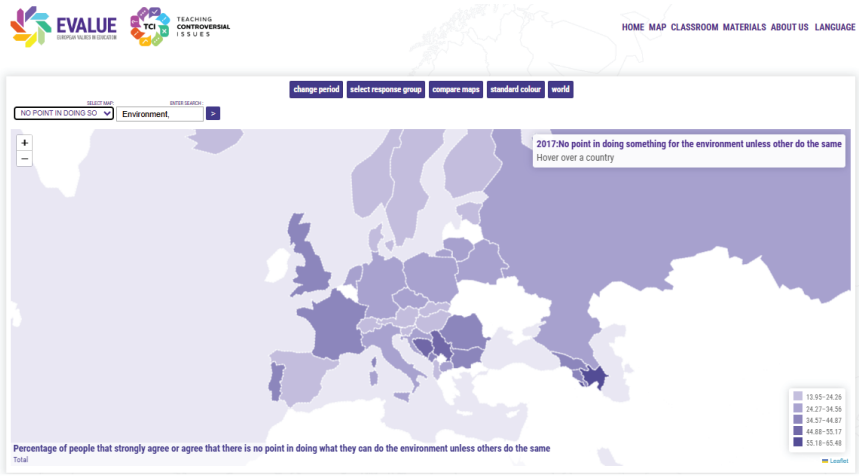
Explain

Speaker presentations and class discussion (15-20 min.): In the Explain phase of the 5E teaching model, each group's speaker presents key answers or findings of the group to the class (question after question). There will be a short discussion about the answers to each of the six questions. The teacher can foster the discussion by additional questions or examples. For instance, the teacher might ask the students a question to make the topic more controversial: "According to the May 2021 data from the European Union Statistics Office (Eurostat) regarding waste exports from EU countries to non-EU countries, waste exports from the EU to non-EU countries have increased by 77% since 2004, reaching 33 million tons in 2021. Waste imports from non-EU countries have increased by 11% since 2004, reaching 19.7 million tons in 2021. Of the 33 million tons of waste, 14.7 million tons were exported to Turkey. According to Eurostat data, Turkey became the largest destination for waste exported from the EU in 2021, with approximately 14.7 million tons. This figure is more than three times the amount in 2004 and nearly half of the EU's total waste exports in the previous year. After Turkey, the second-largest country was India, which received approximately 2.4 million tons of waste from the EU in 2021, followed by Egypt (1.9 million tons), Switzerland (1.7 million tons), the United Kingdom (1.5 million tons), Norway (1.4 million tons), Pakistan (1.3 million tons), Indonesia (1.1 million tons), the United States (0.9 million tons), and Morocco (0.6 million tons)" (Ökten Sipahioğlu, 2023). What do you think are the underlying reasons for countries exporting waste outside their borders? How does reading this news and evaluating the reasons affect people's reactions to the statement 'There is no point in doing what I can for the environment unless others do the same'?

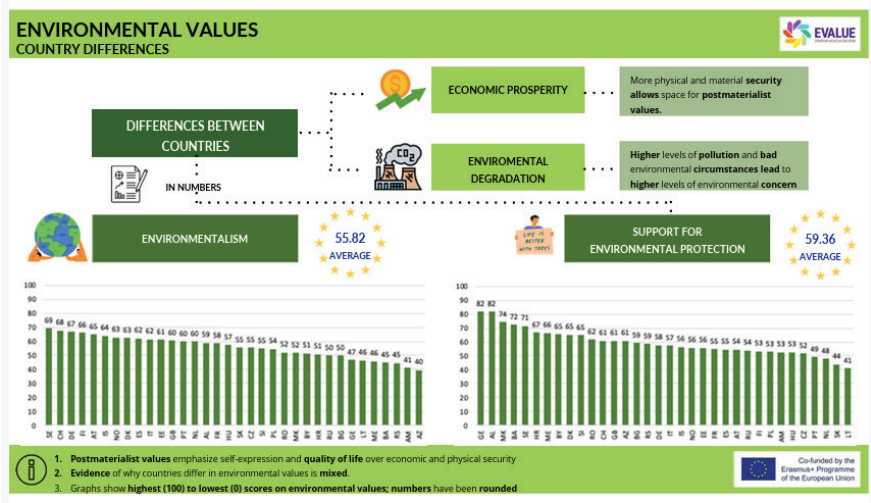
Expand

Link to values clarification/explanatory theories (20 min.): In the Expand phase of the 5E teaching model, the teacher links the discussion results to theoretical backgrounds and explains the existence of different opinions and attitudes on the discussed issue/5W1H questions. The teacher can use maps and other tools from the website www.atlasofeuropeanvalues.eu.

The map (below) related to the statement "There is no point in doing what I can for the environment unless others do the same" is opened from the website, and students are asked to interpret the map.

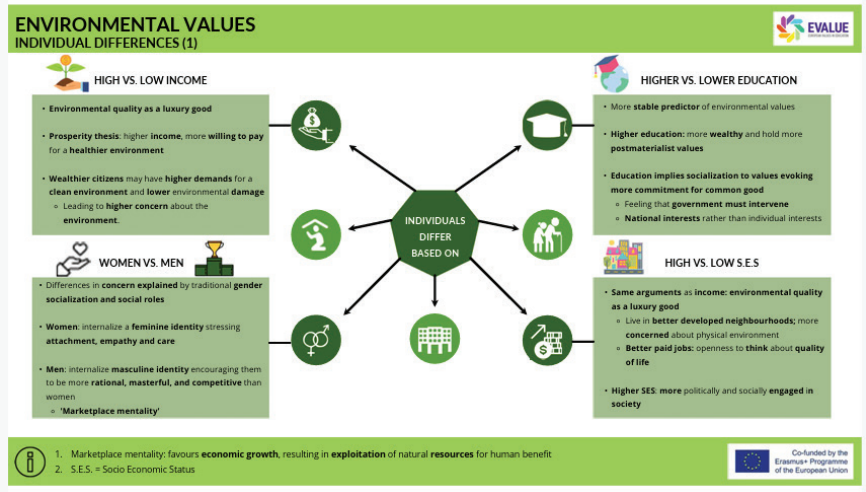


Differences between countries are highlighted, and students' opinions on the possible reasons for these differences are gathered. After gathering student opinions, the teacher discusses how economic prosperity or direct exposure to environmental degradation explain the differences between countries using background information or infographics from the website.



Differences between different participant groups for the same statement are highlighted, and students' opinions on the possible reasons

for these differences are gathered. After gathering student opinions, the teacher discusses how variables such as education level, income level, age, or gender explain individual differences using infographics.

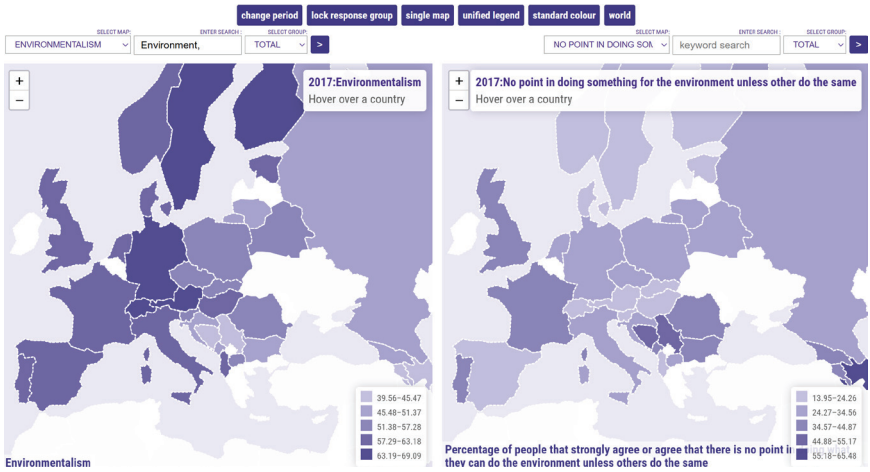


Evaluate

Facilitating opportunities for students to conduct independent research (20 min.): The following maps illustrate the environmentalism of various countries and the data associated with the statement "There is no point in doing what I can for the environment unless others do the same." Analyze and compare the environmentalism of different countries and categorize their environmentalism according to a criterion of your choice. Subsequently, elucidate the relationship between the selected statement and environmentalism providing evidence.

Background Information:

Environmentalism is all about taking care of the Earth. It includes different ways to help, such as; Conservation: Saving nature and animals, Activism: Speaking up for rules that protect the environment., and Sustainability: Using resources wisely so they last a long time. Environmentalism aims to make sure what we do doesn't harm the planet, by changing laws, how we act, and how businesses operate.


change period
lock response group
single map
unified legend
standard colour
world
SELECT MAP:
ENVIRONMENTALISM
ENTER SEARCH:
Environment,
SELECT GROUP:
TOTAL
>
SELECT MAP:
NO POINT IN DOING SOM
ENTER SEARCH:
keyword search
SELECT GROUP:
TOTAL
>
2017:Environmentalism
Hover over a country
39.56–45.47
45.48–51.37
51.38–57.28
57.29–63.18
63.19–69.09
Environmentalism
2017:No point in doing something for the environment unless other do the same
Hover over a country
13.95–24.26
24.27–34.56
34.57–44.87
44.88–55.17
55.18–65.48
Percentage of people that strongly agree or agree that there is no point i
they can do the environment unless others do the same

Worksheet of Tackling Environmental Waste

Group Name:

Theme and Controversy: Environmental problems caused by waste from human activities - "There is no point in doing what I can for the environment unless others do the same."

1. In your opinion, what are the environmental problems caused by waste from human activities?

2. Where do you think the solutions to environmental problems caused by waste from human and human activities should begin?

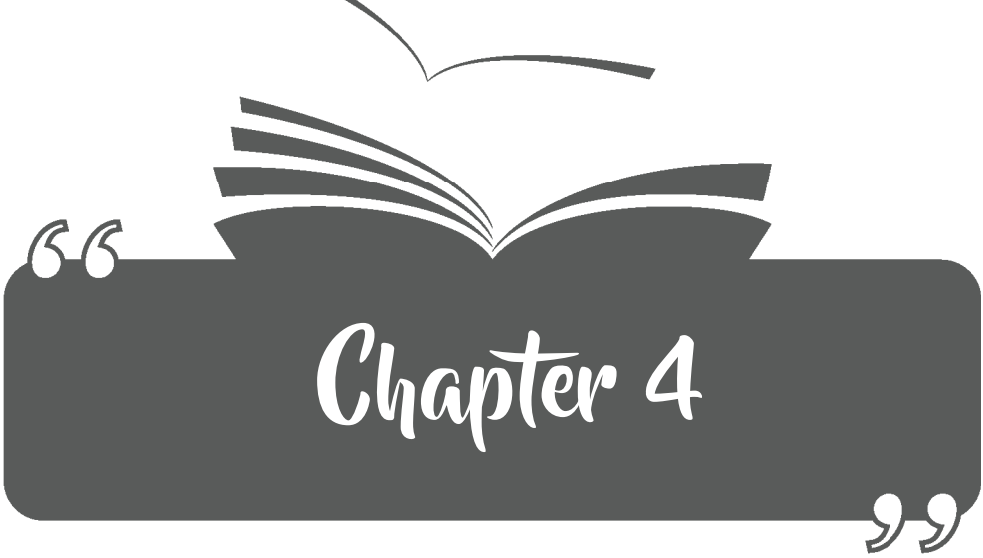
3. As a human, when do we start to feel the concern that our activities are causing problems for the environment?

4. Who or which groups in society think that taking an action or precaution for the environment is meaningless unless others do the same?

5. Why do people think that taking an action or precaution for the environment is meaningless unless others do the same? (Discuss the effects of individual effort versus collective effort.)

6. How can individuals who think that taking an action or precaution for the environment is meaningless unless others do the same be motivated to tackle the environmental problems?

http://atlasofeuropeanvalues.eu



FACTORS TRIGGERING TWO PRACTITIONERS' TRANSFORMED TEACHER IDENTITIES AND PRACTICES IN AN EIL-ORIENTED MA COURSE: ANALYSIS OF THEIR TRAJECTORIES THROUGH DIALOGIC REFLECTIVE ENTRIES

Şakire ERBAY ÇETİNKAYA[1]

1 Assoc. Prof., e-mail: sakirecetinkaya@trabzon.edu.tr Department of English Language Teaching, Trabzon University, Trabzon, Türkiye ORCID ID 0000-0003-2594-1205

Introduction

The changing landscape of English has challenged the monolithic English view, thereby resulting in pedagogical consequences for English Language Teaching (ELT) such as WE, EFL, EIL, and GE. Different concepts have been documented to refer to those consequences. Some tend to prefer "the term Global Englishes Language Teaching (GELT) as an umbrella concept to unite the calls for change in ELT" (Galloway & Rose, 2018, p. 4), shaped by the World Englishes, ELF, EIL, and even Translanguaging perspectives. Scholars in those related fields such as Braj Kachru, Barbara Seidlhofer, Aya Matsuda, and Ofelia Garcia, to list but a few respectively seem to agree on the need to emphasise English diversity and therefore the promotion of English as a non-monolithic language variety (Galloway & Numajiri, 2020). Distinguishing the related terms, WE, ELF, and EIL, McKay (2018) notes that the former is mainly concerned about the distinctive characteristics of nativized Englishes, i.e., the content, the latter adopting a pluricentric approach deals with both the content of new Englishes and the nature of interactions between English users. EIL, concerned about both content and interaction, focuses on devising some key pedagogical principles for the instructional variety to promote in the classroom, means of instruction, knowledge, skills, and strategies to be developed, the cultural basis of the curriculum, instructional materials, assessment and evaluation, and teacher training and education (McKay, 2018; McKay & Brown, 2015).

All these overlapping terminologies encourage multilingualism, voice the need to increase awareness of English diversities, increase familiarity with diversity through exposure, raise awareness of cross-cultural communication strategies, encourage cultural openness, and promote cross-cultural understanding in ELT. However, in the current paper, to ensure consistency throughout the paper the term EIL and TEIL are preferred, for their focus on empowering learners of English and innovating ELT. In other words, they all encourage teachers to re-examine their assumptions, roles, and classroom practices through engaging in reflective thinking and teaching practice. Those attempts the positive appraisal of which is well-documented in diverse education contexts, including Brazil (Cogo & Siqueira, 2017), Greece (Kordia, 2023), and Turkey (Bayyurt et al., 2019) are expected to encourage reflective thinking and result in transformative learning, fostering the adoption of more inclusive ELT approach.

As documented by Liu (2015), the history of the philosophical tradition of reflection dates back to times of Confucius in ancient China (551 BC–479 BC); however, the idea of teacher as a reflective practitioner is as-

sociated with the attempts of two influential figures John Dewey in 1930s and Donald Schön who expanded on his works in 1980s. To them, reflective thinking is essential for problem solving, transformative learning, and continuous professional growth, i.e., both personal and professional growth. Contextualising reflection particularly in teaching professional practice, Donald Schön introduced the concepts of reflection-in-action and reflection-on-action. Since then, reflection has been integrated into teacher education on a global scale, for it is regarded as a key skill for teachers to develop. Another related term is critical reflection, which Liu (2015) conceptualises as follows:

Critical reflection is a process of constantly analysing, questioning, and critiquing established assumptions of oneself, schools, and the society about teaching and learning, and the social and political implications of schooling, and implementing changes to previous actions that have been supported by those established assumptions for the purpose of supporting student learning and a better schooling and more justice society for all children. (pp. 144-145)

Methods of reflection could be summarised with three dimensions of variations, including guided versus free, dialogic versus expressive, and public versus private reflection (Sturgill & Motley, 2014). While in guided reflection prompts are offered to individuals, in free format, they are expected to write, constructing their own knowledge. The second binary structure highlights getting feedback versus lack of comments in the process. Lastly, while private one is accessible to only related parties, public one has a wider audience. Various terms are synonymously used to refer to dialogic reflection, including reflective dialogues, dialogic feedback, dialogical reflection, and collaborative reflection (Chung, 2023). Dialogic reflection or journal require a written exchange between the parties and has been reported to promote reflective thinking in teacher training and education (Lee, 2004). Porter at al. (1990) list several benefits of this attempt, including offering them help in specific difficulties, encouraging independent learning, increasing self-confidence, connecting course content and classroom practice, continuing interaction outside classroom borders, and making teacher training more process-oriented (as cited in Lee, 2004, p. 73). Such a critical and dialogic approach could contribute to the joint construction of knowledge (McClure & Vasconcelos, 2011).

The current study drawing upon the Transformative Learning Theory of Jack Mezirow as its theoretical framework aimed at investigating the factors triggering those transformative learning experiences of two practitioners. Inspired by the ideas of Paulo Freire and John Dewey, Mezirow (2003) devised the theory, which requires examining one's as-

sumptions, ideas, and perceptions to reach a more open-minded, critical, whole-hearted, and responsible level. Here, critical reflection mediates transformative learning (Sifakis, 2007). Although Mezirow's conceptual framework, i.e., transformational learning theory, has a significant impact on the attempts to characterise adult learning (Fleming, 2022; Kitchenham, 2008), it has also been criticized, for all those eleven phases focus on cognitive and rational development rather than non-cognitive ones including spiritual, social, and emotional development, and the social dimension is missing for its overemphasis on individual development (Arends, 2014; Cranton & Taylor, 2012; Fleming, 2022; Servage, 2008). In the current research, the factors triggering teachers' trajectories were grouped into four, as the originally eleven stages of the theory are suggested to be categorised into fewer stages, including the following four ones: disorienting dilemma, critical reflection, practice development, and integration into relationships with others (Brock, 2010; Choi, 2020; DeCapua et al., 2018; Kumi-Yeboah, & James, 2012).

The Context and Justification of the Current Research

Although Turkish teachers have been documented to welcome TEIL as long as the clarity and understanding are ensured, various barriers have been reported to discourage them to implement it in their classrooms, i.e., mismatch between beliefs and practices. These include lack of EIL-oriented instructional materials and existence of norm-bound tests, the need for practical rather than theoretical workshops show that practical knowledge on how to instruct, devise materials, and (Uyar & Erozan, 2024), and the predominant tendency to see the native speaker as the owner of English and therefore the yardstick and emphasise accuracy (Bayyurt et al., 2019), to list but a few. Yet, few studies have reported contrasting finding inharmonious with that negative picture. To illustrate, in the study of Ceyhan-Bingöl and Özkan (2019), Turkish English instructors working at a school of foreign languages, parallelism between teacher mindset and classroom practices was identified in that the participants aware of EIL reality tried to meet their learners' needs in the globalised world with their classroom practices. Similarly, the university instructors in the study of Yılmaz-Şengöz and İnal (2023) were found to be willing to modify their instruction and materials within ELF-framework. Fidan et al. (2024) found Turkish prospective English teachers willing to integrate EIL/ELF/WE-informed pedagogies into their future classes. A WE-informed classroom intervention helped them plan to adopt a flexible and inclusive approach in their future classrooms. Similarly, the classroom intervention of Aslan and Özer-Altınkaya (2024) was found to change the monolithic perspectives of Turkish prospective teachers of English.

As ELF and EIL encourage teachers to transform their ideas, perceptions, and classroom practices (Sifakis & Kordia, 2019), tracing the transformational journey of in-service practitioners and the triggering factors behind the stages with the Transformational Learning theory of Jack Mezirow is valuable. Those recent calls to design EIL/ELF/WE/GE-oriented curriculum particularly at tertiary level that encourage a critical stance (e.g., Fang & Ren, 2018) to ensure an effective and long-lasting innovation (Galloway & Numajiri, 2020) as well as the limited number of studies integrating transformative learning theory into particularly foreign language teacher development (e.g., DeCapua et al., 2018) motivated me to conduct the current study.

Believing in the collaborative dimension of learning and transformation (Walsh, 2017), I was inspired by the established potential of dialogic reflection for teacher education and motivated to respond to the recent calls to further the existing understanding of the dialogic approach to teacher professional development in non-western contexts (Chung, 2023). The current study could be also justified on the methodological choices of the earlier related studies. Interviewing as the most frequent data collection method in TEIL/ELF/GE-oriented teacher education is criticised not to draw a reliable picture due to interviewer bias (Choi, 2022; Cohen et al., 2017). Reflective writing could be utilised as a primary or supplementary data source due to its potential to generate more in-depth data on dilemmas, beliefs, and assumptions and the factors triggering them gathered in longer period of time under less pressured conditions (Cohen et al., 2017; Parabjandee, 2020). Thus, the current research was guided by the following research questions:

1. What factors triggered the transformative learning trajectories of the practitioners?

1.1. Which factors triggered their disorienting dilemmas?

1.2. Which factors triggered their critical reflections on their assumptions and roles?

1.3. Which factors triggered their decisions to plan and implement changes in their classroom practice?

1.4. Which factors triggered their tendency to integrate those practices into their lives?

Methodology

As a pracademic with a dual role, i.e., an academician and a practitioner at tertiary level, I am always concerned about the reflections of what I read on my actual practices. The individual attempt of investigating the possible triggering factors behind the transformative journey of my graduate students who are all active language teachers in a formal course could have long-term impacts on personal and institutional level. The results could advance my knowledge and pedagogy through suggesting me changes in the coursework to empower teachers. I could feel more confident and reassured about what I have read on TEIL, more connected to my students and help their transformative journey with a good mentorship (DeCapua et al., 2018; Edwards & Burns, 2015), gain insight into their concerns, perceptions, and possible worries, and learn various viewpoints from actual teachers from the field. Additionally, an in-depth and contextualised exploration of the factors behind their transformations could serve as a need analysis for me to re-examine my course syllabus to offer a complete understating of the issue.

Setting and Participants

The setting of the current research was the Applied Linguistics Master of Arts programme offered by the English Language and Literature department of a north-eastern state university in Türkiye. 2 participants (F=1; M=1) enrolled at a 16-week-MA course entitled as IDE 5953 World Englishes, offered by me served as the data sources. The male participant, Aslan, a pseudonym, had a one-year-teaching experience at a private school where he was teaching English to primary and secondary schools. Similarly, Burcu, a pseudonym, was working at another private institution in the province for 5 years. I offered both various skill, content, and culture courses in the institution during their BA education before their MA journey.

Procedure

The aforementioned course was structured around lectures, out-of-class readings, classroom discussions based on the assigned readings and watched materials, and student presentations. The qualitative data came from the participants' weekly dialogic reflective entries to which I responded every week through answering their questions and clarifying the unclear points, asking them further questions to encourage them to reflect upon more critically, and offering further academic and pedagogical support materials. Table 1 illustrates an example week from the course syllabus with the description of the process and actions:

Table 1. One Example Week

Week 5: Teaching and Assessing Literacy: Reading, Writing, and Grammar		
Activity	MA Candidate Role	Course Instructor Role
Pre-class activity	Reading the assigned materials and getting ready for classroom discussion: 1. Chapter 6: Teaching and Assessing Literacy (in Teaching and Assessing EIL in Local Contexts Around the World by Sandra Lee McKay and James Dean Brown, 2015) 2. Chapter 4: Teaching and Assessing Grammar (in Teaching and Assessing EIL in Local Contexts Around the World by Sandra Lee McKay and James Dean Brown) 3. Chapter 45: Language assessment: The challenge of ELF by Luke Harding and Tim McNamara (in The Routledge Handbook of English as a Lingua Franca edited by Jennifer Jenkins, Will Baker, Martin Dewey in 2017) 4. Chapter 8: Assessing English as an International Language by Guang Wei Hu (in Principles and Practices for Teaching English as an International Language edited by Lubna Alsagoff, Sandra Lee Mckay, Guangwei Hu, & Willy A. Renandya in 2012)	Assigning 4 pre-determined book chapters serving as the foundation for face-to-face class discussions and after-class weekly dialogic critical reflection
In-class activity	Sharing their interpretations and interacting with both parties	Providing a brief overview of the related chapters, facilitating classroom discussion through asking divergent questions, encouraging participation, and moderating the interaction
After-class activity	Writing critical reflection upon the week's theme, combining their pre-reading, in-class discussion, and reflecting upon their classroom pedagogies	Reading the reflective entries
Further learning activity	Reading the responses, following suggestions (if applicable), and responding back in their further journal entries in Week 6	Writing response to the entries to guide their further learning through commenting on, asking further questions and suggestions, and offering extra materials

Data Gathering and Analysis

I gathered the data through weekly written dialogic self-reflections which were free, dialogic, and private. I did not give them pre-structured items to comment on; rather, I expected them to write whatever they wanted to share related to the topic of that particular week. Besides, those reflections were conversational, in that we had a mutual written dialogue throughout the term. Where I answered their questions, clarified points, and offered further academic and pedagogical sources in the form of an onsite support. Lastly, the attempt was private, for they only had me as the audience and di not share their entries with their peers.

I utilised qualitative content analysis where I coded the data twice both during the course and immediately after it to ensure data reliability. Using manual coding, I identified the codes guided by my research questions, and then grouped them into more abstract and general categories (Hsieh & Shannon, 2005), Additionally, as I was inspired by the documented literature highlighting the potential of ChatGPT, a popular AI tool, to analyse data qualitatively and identify themes (see, for instance, Morgan, 2023, Sen et al., 2023; Wachinger et al., 2024), I utilised it to double-check the concepts and themes as the outcomes of my manual coding. In the whole process, I paid attention to all ethical considerations through taking the participants' consents, protecting their identities through using pseudonyms and being transparent about the whole process.

Findings

Factors Triggering Their Disorienting Dilemmas

The main factor triggering their uncertainties and discomfort is encountering an alternative perspective through their classroom readings, discussions, and extra research. They realised the difference between TEIL and the traditional Anglo-centric view of ELT. Their cognitive dissonance resulted from their realisation of the conflict with their current practices and the TEIL philosophy. The fact that they were accustomed to those conventional practices made them feel overwhelmed after they read the materials and discussed the issues in the classroom with a critical eye. To illustrate, in the following excerpt, Aslan criticised the centralised the rigid Turkish education system that does not welcome local adaptations and the limited cultural scope of the existing materials:

Another point is the books utilised in language teaching. I am the one who supports teaching English with the meaningful materials, and using materials which enables students to find meaning counterparts in their local context. However, the books especially in private sector are designed

according to target culture context as I discussed in class (Irish stew, Gaelic football etc.). this type of books does not help my students to internalise not only the content given but also the grammar rules. Therefore, in terms of Kumaravadivelu's practicality theory, there must be language teaching reform based on teachers' experience and students' needs and environment. However, I think that it is impossible to implement such a project especially in Turkey, as our education system is managed by a single centre (Turkish Ministry of national Education) that is far from idea of globalization. Even if it is not, the most appropriate way of designing curriculum which meets students' language needs is again creating seven local education units where experts and language teachers take part in. (nice dream!). [Aslan, 2nd reflective entry, mistakes in original]

Another factor triggering their uncertainties is their practical implementation concerns mainly due to their institutions and community of practice. The emphasis of their institutions to follow traditional Anglocentric ELT assumptions and their peers' resistance to change seemed to lead to emotional challenges in both Aslan and Burcu. The following excerpt illustrates this uneasiness, yet Burcu seemed determined to take baby steps in her institution:

This week I had a meeting with my principles and with my English colleagues, in this meeting I shared my opinion about the native-like accent and the native-based books. Unfortunately, they were against my ideas and especially my principle thought I'm crazy (I could read that on his face). Without my principle's agreement, I'm not allowed to make a change. After that and still I feel I'm at a blind alley. However, I know myself and I never give up, I'm sure that I will find a way to take my ideas regarding these two issues into account. [Burcu, 3rd reflective entry, mistakes in original]

Similarly, in the following excerpt, Aslan touches upon the lack of institutional flexibility and support he suffers from:

However, when we try to negotiate all these observation, interpretation, and contribution with our head of department, she/he warns us not to put a stick in a honeycomb. Therefore, I feel that it will take more time than we imagine to change something in Turkey. Even if you do not feel comfortable to share your ideas, I have some suspicious to find an authority whom she/he listens to me (I'm not that much pessimistic madam, don't worry. I just try to evaluate situation). [Aslan, 3rd reflective entry, mistakes in original]

I also found that their fear of inadequacy may lead to dilemmas, in that they lack self-confidence in their practical knowledge to integrate EIL philosophy into their teaching. Their limited exposure to practical EIL-oriented teaching activities, tasks, and materials as well as practical

guidelines to broaden the linguistic and cultural scope of ELT seemed to make them feel confused about how to ensure a balance. In other words, their self-doubt about their teaching as well as assessing abilities is clear. Therefore, they seemed to struggle about how to shift their classroom practices to integrate TEIL philosophy into their pedagogy, thereby asking for further guidance and suggestions. To illustrate, in the following excerpt, Aslan summarises the reasons for his self-doubt particularly in assessing students with EIL-oriented alternative assessment methods:

I had never chance to practice what you suggested to assess my students' competencies by means of all these alternative ways. There are several reasons, and let me list my reasons. First of all, I am a two-year experienced teacher but only 6 months face to face education. Throughout this pandemic, we did not have any attempt to assess or evaluate our students' speaking or listening competencies. Actually, we had never thought! Another reason is about me. As you said in your feedback, YES!! I feel insecure about this assessment issue, because I believe that knowledge comes from practice. However, I had never chance to practice because I suddenly found myself struggling with the distance education process and I was surprised/ shocked what to do. Another reason is about my background knowledge. What I mean saying background knowledge is that I was not aware that assessment is a field to be studied. I even don't know what to read or where to start. [Aslan, 5th reflective entry, mistakes in original]

I also found in Aslan's dialogic reflections that his lack of exposure to other Englishes and cultures that significantly differ from the so-called native ones made him feel uncertain, ashamed, and uneasy. In the following excerpt, he confesses that he realised his initial biases thanks to the classroom discussions:

As discussed in class, exposing our students to different varieties enables them to know other cultures and the way they speak English. In addition, this "method" offers an opportunity them to say "Ohh… this voice and English sound familiar, actually yesss… I can understand what they say". Giving this thought to them matters to me, since I had never experienced before arrived to university. As a student with poor English practice, I was both angry and laughed when I heard different (Iran and ingilizca) accents (as if I was super at pronunciation). Then, I learned and understood that they only pronounce with their L1 background. They have difficulty in producing some certain letters (cuti-duty/ sıtraksır-structure), just as we have trouble making certain sounds in English (think/weather). Now, I've been teaching to my students that there are several accents you may hear. They may not fall into such a mistake and heedlessness as their teacher did once… Last week, I realized that we provide chance to familiarize our students to dif-

ferent accents. My school created an environment where my students recognize different accents with their native and foreign teachers, even though it's done unconsciously. Until last week, I was thinking that why foreign teachers (Morocco, Algeria, Japan) teach in our school, their accents sound weird to the students. But now, I am so happy for my students. [Aslan, 4th reflective entry, mistakes in original]

Lastly, I traced a few dilemmas resulting from conceptual complexity and overlap. At the outset, the difficulty to differentiate between the synonymously used terms, i.e., EIL ELF, WE, and GE, made both perplexed about how those could inform ELT practices. However, later the more I clarified those terms, the safer they felt.

Factors Triggering Their Critical Reflections

It seems that the assigned readings and critical discussions in the classroom triggered their critical reflection. Those reading helped them question their prior assumptions and beliefs and their current practices, as was happened to Burcu:

Also, I would like to clarify something regarding my teaching, I'm teaching at a private college and as a teacher we are required to teach the British English to the students. Especially, through the first session I recognized that I'm training my elementary students as fake native speakers. This was a point that I started to criticize my teaching because as it was highlighted in the course English is an international language and the owner of the language English changed. I understood that I was focused to0 much on the Anglo-centric view, which I will try to change by including different varieties of the English language. [Burcu, 1st reflective entry, mistakes in original]

In addition to reading materials, audio-visual ones shared by leading international and local figures could trigger those critical reflections. To illustrate, when Aslan was confronted with a new perspective in the webinar offered by a well-known Turkish figure, i.e., Yasemin Bayyurt, these outside ideas helped him see the issue from a different angle.

When they were triggered, they asked for further sources to understand the issue better. To illustrate, Aslan's desire for further sources from me to explore the issue deeply and more comprehensively could be seen below:

By the way I've read the article twice, and now want to leave some comments as we actually Buse discussed in the class. To start, madam, you call this article one of the best, could you please share with me some other

articles which simply define the terms, their aims etc. throughout this article, I feel really happy to learn and understand what EIL's rationale, what it deals with and so on. These kinds of informative articles will help me to go deeper to internalize this issue. [Aslan, 5th reflective entry, mistakes in original]

Besides, the process of writing reflections, getting responses to their reflections, and engaging in a critical written dialogue with me as the professor seemed to help provoke critical thinking, which encouraged further implementations. To illustrate, in one of her entries, Burcu noted that my response encouraged her to conduct informal research to see the existing gaps in the field:

Especially, after reading your response I started directly with a research study and I discovered that most studies have been carried out with university students and with instructors. I found some papers and books as well as book chapters; however, I'm not sure where exactly I should get started. I hope I could explain myself in this issue and I would like to thank you madam because this is the second time that you set a fire for another topic. [Burcu, 2nd reflective entry, mistakes in original]

In the following excerpt, when Aslan questioned the inclusion of diverse cultures in the syllabus for the lack of possibility of encountering such people in Türkiye, I responded back and challenged him, touching upon the limited way of looking things:

I like the way you question me (a smiling emoji). Why do you think that our students will only need English to communicate with tourists? There are other reasons lying behind their motivation to learn English or where they could use English: trade (think about the cultures we exchange goods?) What about Erasmus? Please do not think that Erasmus is held in European countries. No, you go to mostly European countries, but "truly" the world comes there from Outer and Expanding circles including Indians, Russians, Iranians, Japanese, Koreans, Malaysians, Africans (I am talking based on my Erasmus experience… I am angry with you as you skipped that chance) (a smiling emoji). It is possible to enlarge this list of motivations to learn English… As we cannot guess whom they would interact, having a broad cultural scope ensures things. (My response to Aslan's 10th reflective entry).

Factors Triggering Their Practice Development

The new example pedagogical activities they have learnt from the course seem to have encouraged them to test them in their classrooms and share the outcomes with me in their dialogic reflections. To illustrate,

Burcu thanked me for testing the idea I shared for the very positive student reactions:

Also, madam two weeks ago we made a brainstorm activity about Covid-19, you were right students are really concerned about real-world events, I was really surprised to hear their ideas as well as opinions toward Covid-19. Not all but some students have even written their opinions in their notebook and to see such things shows me how important this lesson is. Therefore, I cannot thank you enough! [Burcu, 8th reflective entry, mistakes in original]

Similarly, in the excerpt below, Aslan shares one of his implemented action where he tried to increase his students' awareness of mutual intelligibility despite diverse ways of pronunciation. His desire to move further to include language politics into his syllabus through encouraging them to discuss the concepts on purpose could be seen below. Furthermore, he often demanded extra materials on EIL activities and tasks to test in his classrooms:

Finally, I would like to mention about one of my classroom applications. This week, I asked my students to join first Irish teacher's link and just observe her how she speaks, pronounce. Then, join others' link even their Turkish teachers. I started in this way, then they said "teacher, yes they say some words different but we understand" I know that this not the only way to raise their awareness, but I will also bring some cultural materials. At the end of the term, I am planning to ask them what is "World Englishes" let's see what they will say. [Aslan, 5th reflective entry, mistakes in original]

Similarly, Burcu asked for my help to increase her students' awareness and take further step at macro level to increase the level of ELT teachers in Türkiye in one of her entries:

Also, I would like to touch one more issue, can we (me and my students) take part in one of your classes in which you are teaching or talking about the varieties of English? Maybe not now, but toward the end of the semester? (a smiling emoji). In addition, I would like to ask you one more thing, regarding the teachers' professional development, maybe we could open a blog or forum in which we start to inform the foreign language instructors, I offer this opinion because I feel we need to take action. [Burcu, 4th reflective entry, mistakes in original]

While documenting his individual experimentations, Aslan also clearly expressed his desire to acquire and refine new knowledge and skills and asked for more sources and guidance, which all prove that he reached Stage 3 Practicing Development. He was enrolled in a related course al-

though in the end he realised that the title was misleading, searched for more audio-visual materials for his students, designed an EIL-oriented course to implement later, created an archive of the suggested course-books, and planned to interact with companies to ask for further sources.

It seems that the critical dialogues they had with me as the facilitator and the supporting mentor-mentee relationship between us also encouraged them further and made them report them back in their entries. Even, this sharing atmosphere encouraged Burcu to have further studies on the issue, who wrote, "I found the PhD story or the PhD research that you have conducted very interesting and I would like to conduct a similar study with my fourth-grade students too; however, my only concern is that my students are too young." (1st reflective entry). In my responses, I always praised their effort, motivated them to take further steps, as well as warned them about the possible faulty actions, as is seen below:

Let me put some balloons here to congratulate you (I put pictures of some balloons here). What you try to do is great. I mean you could turn that club into a kinda "(inter)cultural sphere", for they are already learning usual stuff in the classroom. That club should add something new to them. However, dear Aslan, please avoid a skewed cultural representation in your activities towards the European ones. I mean variety should not only cover the European cultures. Instead try to integrate some underrepresented cultures such as Africa. Otherwise, your cultural content will be limited and biased and does nothing but adds to your students' cultural prejudices in the end. (My response to the 6th reflective entry of Aslan)

Furthermore, their commitment to learning the EIL practice and test the ideas in their own classrooms seemed to trigger their further pedagogical development.

Factors Triggering Their Integrative Relationship

I could not trace the social dimension of their transformative learning trajectories, and therefore, there were not any factors triggering their integrative relationship that should be understood as the social rather than individual nature of their attempts. However, I also had a similar transformative learning trajectory that ended in my attempts to adopt an EIL-oriented practice style, and therefore, they were highly likely to experience that social dimension with various triggering factors if the process was longer.

Discussion

The current qualitative case study aimed at exploring the factors mediating the transformed teacher identities and practices of two English practitioners in a related EIL-oriented MA course in their dialogic reflective journal entries. I found that they experienced various dilemmas which triggered their critical reflections. Similar to the study of Choi (2020), their dilemmas were triggered through encountering EIL perspective which was totally new them, thereby helping them realise the gap between the new perspective and their actual classroom practices. Their practical implementation concerns mainly due to their institutions and community of practice also triggered their dilemmas, in that they were not welcome when they shared their excitement and ideas with them immediately after the class. The lack of awareness and support from institutions and communities of practice was found as a serious source of dilemma in earlier studies (Blair, 2017; Cogo & Siqueira, 2017). Still another triggering factor was their limited exposure to practical EIL-oriented teaching activities, tasks, and materials as well as practical guidelines to broaden the linguistic and cultural scope of ELT.

Regarding the factors triggering their critical reflections, I found that their exposure to TEIL perspective as an alternative paradigm shift and the engagement in writing dialogic journal entries were the two predominant factors triggering their critical and reflective thinking. This supports the findings of earlier research that underline the importance of writing reflection in deep thinking about one's own assumptions (see, for instance, Choi, 2020; Dyce & Owusu-Ansah, 2016). Besides, the dialogic space created through those dialogic reflective journals as an interpersonal activity also encouraged their critical reflection, as was also found by Choi (2020). Such an engagement in reflective reading and writing encourages related parties to think deeply about their assumptions and actions, thereby feeling courageous to make changes in their own practices (Ab Rashid, 2018; Karakaş & Boonsuk, 2024).

Lastly, the factors mediating their practice development were exposure to practical implementation ideas, their critical dialogue with me where I guided them further with extra resources and implementation ideas, and their own commitment to enliven those ideas in their classrooms. Similar to the study of Choi (2020), the participants found opportunities to apply test ideas in their classrooms and reflected upon their experiences in their dialogic entries where I supported and guided them as their supervisor. Reflecting upon their experience and getting feedback on them helped them improve their practice and have further implementation ideas. Above all, their commitment played a great role in the mediation

of their practical knowledge development. This echoes previous research that found that a dialogic space with peers or teacher educators could help critical reflection and encourage further teacher steps (see, for instance, Choi, 2020; Dyce & Owusu-Ansah, 2016; Kordia, 2023; Liu, 2017).

Based on the findings of the current research, the following pedagogical suggestions could be offered to help teacher educator to foster transformative learning. It was found that external factors could serve as a source for dilemma, and the mindset of institutional administrations and community of practices within one's own school environment could be a encouraging or discouraging factor. Therefore, teachers need to be encouraged to form professional communities of practices, where they discuss ideas, test them, share their experiences, thereby ensuring a continuous and deeper professional development. Furthermore, thanks to technological advances, those communities could be extended to online platforms for richer professional discussions and insights with larger and varied audiences beyond the classrooms. Furthermore, in the current study, the participants' limited exposure to practical EIL-oriented teaching activities, tasks, and materials as well as practical guidelines to broaden the linguistic and cultural scope of ELT seemed to make them feel less self-confident and secure, resulting in hesitancies. Therefore, such training modules need to cover practical learning opportunities as well as exposure to related to academic content to let them test those ideas and then reflect upon the outcomes. Lastly, it should not be ignored that such transformative journeys could challenging and discouraging, resulting in negative emotions such as disappointment, stress, self-doubt, to list but a few (Sifakis & Kordia, 2019). Here the empathetic support and feedback of an understanding mentor could help them deal with their discomfort, end in truly critical reflection, and feel courageous to implement related ideas, and publicise their outcomes, thereby ensuring the completion of the full transformative learning cycle (Kordia, 2023).

Conclusion

The present qualitative case study aimed at investigating the factors triggering two English practitioners' transformative learning trajectories, covering their dilemmas, critical reflection, practice development, and integrative relationships. Various internal and external factors were found to mediate their development. In addition to their own teaching experiences and feelings as internal ones, teaching context and the constructive role of exposure to an unfamiliar content were seen to play an important role in the development of their EIL-oriented teacher identities. Besides, dialogic reflective journal entries as one type of important reflective tools

and the constructive mentor-mentee relationship contributed to the participants much.

The study is not without its limitations. The primary limitation is that the data were gathered from a small sample of only two novice practitioners, thereby not allowing me to make conclusions fully representing all related participants. Future studies with larger samples could yield to different results complementing the existing picture, therefore. Second, as I only used self-reported data, I acknowledge that the findings could be biased and heavily contextual; therefore, future studies could utilise triangulation and gather data from diverse samples to let future researchers collect data applicable to larger audiences. Lastly, as cognitive, performative, and conative changes require longer durations, future studies could be longitudinal to draw a complete picture of those possibly triggering factors behind those trajectories.

References

Ab Rashid, R. (2018). Dialogic reflection for professional development through conversations on a social networking site. *Reflective Practice*, *19*(1), 105-117. https://doi.org/10.1080/14623943.2017.1379385

Arends, J. (2014). The role of rationality in transformative education. *Journal of Transformative Education, 12*(4), 356-367. https://doi.org/10.1177/1541344614549600

Aslan, R., & Özer-Altınkaya, Z. (2024). Prospective English language teachers' understandings of global English language teaching. *European Journal of Education, 59*, e12631. https://doi.org/10.1111/ejed.12631

Bayyurt, Y., Kurt, Y., Öztekin, E., Guerra, L., Cavalheiro, L., & Pereira, R. (2019). English language teachers' awareness of English as a lingua franca in multilingual and multicultural contexts. *Eurasian Journal of Applied Linguistics, 5*(2), 185-202. https://doi.org/10.32601/ejal.599230

Blair, A. (2017). Standard language models, variable lingua franca goals: How can ELF-aware teacher education square the circle? *Journal of English as a Lingua Franca, 6*(2). https://doi.org/10.1515/jelf-2017-0016

Brock, S. E. (2010). Measuring the importance of precursor steps to transformative learning. Adult *Education Quarterly, 60*(2), 122–142. https://doi.org/10.1177/0741713609333084

Ceyhan-Bingöl, Z., & Özkan, Y. (2019). EFL instructors' perceptions and practices on English as a lingua franca (ELF). *The Reading Matrix: An International Online Journal, 19*(2), 86-102.

Choi, K. (2020). Investigating Global Englishes-oriented teacher development through the lens of transformative learning theory: A study of South Korean elementary EFL teachers' experiences [*Unpublished Doctoral Dissertation*]. University of Cambridge.

Chung, E. (2023). Eleven factors contributing to the effectiveness of dialogic reflection: Understanding professional development from the teacher's perspective. *Pedagogies: An International Journal, 18*(2), 268-288. https://doi.org/10.1080/1554480X.2021.2013234

Cogo, A., & Siqueira, S. (2017). Emancipating myself, the students and the language: Brazilian teachers' attitudes towards ELF and the diversity of English. *Englishes in Practice, 4*(3), 50–78. https://doi.org/10.1515/eip-2017-0003

Cohen, L., Manion, L., & Morrison, K. (2017). *Research methods in education* (8th ed.). Routledge.

Cranton, P., & Taylor, E. W. (2012). Transformative Learning Theory: Seeking a more unified theory. In E. W. Taylor & P. Cranton (Eds), *The handbook of transformative learning: Theory, research, and practice* (pp 3-20). Jossey-Bass.

DeCapua, A., Marshall, H. W., & Frydland, N. (2018). The transformational learning journey of a novice ESL teacher of low-literate adults. *Journal of Transformative Education, 16*(1), 17-38. https://doi.org/10.1177/1541344617704645

Dyce, C. M., & Owusu-Ansah, A. (2016). Yes, we are still talking about diversity: Diversity education as a catalyst for transformative, culturally relevant, and reflective preservice teacher practices. *Journal of Transformative Education, 14*(4), 327–354. https://doi.org/10.1177/1541344616650750

Edwards, E., & Burns, A. (2016). Language teacher action research: Achieving sustainability. *ELT Journal, 70*(1), 6-15. https://doi.org/10.1093/elt/ccv060

Fang, F., & Ren, W. (2018). Developing students' awareness of Global Englishes. *ELT Journal, 72*(4), 384-394. https://doi.org/10.1093/elt/ccy012

Fidan, C., Mourchid, M., & Bouaissane M. (2024). Attitudes toward World Englishes and World Englishes-informed pedagogies among prospective ELT teachers in Türkiye. *Focus on ELT Journal, 6*(3),76-92. https://doi.org/10.14744/felt.6.3.5

Fleming, T. (2022). Mezirow's theory of transformative learning: Dialogue with Honneth's critical theory. In E. Kostara, A. Gavrielatos & D. Loads (Eds), *Transformative Learning Theory and praxis: New perspectives and possibilities* (pp 3-14). Routledge.

Galloway, N., & Numajiri, T. (2020). Global Englishes language teaching: Bottom-up curriculum implementation. *TESOL Quarterly, 54*(1), 118-145. https://doi.org/10.1002/tesq.547

Galloway, N., & Rose, H. (2018). Incorporating Global Englishes into the ELT classroom. *ELT Journal, 72*(1), 3-14. https://doi.org/10.1093/elt/ccx010

Hsieh, H. F., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research*, *15*(9), 1277-1288.

Karakaş, A., Boonsuk, Y. (2024). 'After reading Widdowson's paper, …Why should I teach native English?' Boosting in-service teachers' Global Englishes (GE) awareness in a GE-Based MA course. *English Teaching & Learning.* https://doi.org/10.1007/s42321-024-00180-1

Kitchenham, A. (2008). The evolution of John Mezirow's transformative learning theory. *Journal of Transformative Education, 6*(2), 104-123. https://doi.org/10.1177/1541344608322678

Kordia, S. (2023). Integrating English as a lingua franca in ELT through reflection on experience: An exploratory study in a transformative teacher education setting in Greece [*Unpublished Doctoral Dissertation*]. Hellenic Open University.

Kumi-Yeboah, A., & James, W. (2012). Transformational teaching experience of a novice teacher: A narrative of an award-winning teacher. *Adult Learning, 23*, 170–177. https://doi.org/10.1177/1045159512457354

Lee, I. (2004). Using dialogue journals as a multi-purpose tool for preservice teacher preparation: How effective is it? *Teacher Education Quarterly*, *31*(3), 73-97. https://www.jstor.org/stable/23478885

Liu, K. (2017). Creating a dialogic space for prospective teacher critical reflection and transformative learning. *Reflective Practice, 18*(6), 805-820. https://doi.org/10.1080/14623943.2017.1361919

Liu, K. (2015). Critical reflection as a framework for transformative learning in teacher education. *Educational Review, 67*(2), 135-157. https://doi.org/10.1080/00131911.2013.839546

McClure, G., & Vasconcelos, E. S. (2011). From 'I am' to 'we could be': Creating dialogic learning communities in ESOL teacher education. *Pedagogies, 6*(2), 104-122. https://doi.org/10.1080/1554480X.2011.563496

McKay, S. L. (2018). English as an international language: What it is and what it means for pedagogy. *RELC Journal*, *49*(1), 9-23. https://doi.org/10.1177/0033688217738817

McKay, S. L., & Brown, J.D. (2015). *Teaching and assessing EIL in local contexts around the world*. Routledge.

Mezirow, J. (2003). Transformative learning as discourse. *Journal of Transformative Education, 1*(1), 58-63.

Morgan, D. L. (2023). Exploring the use of artificial intelligence for qualitative data analysis: The case of ChatGPT. *International Journal of Qualitative Methods, 22*, 1-10. https://doi.org/10.1177/16094069231211248

Prabjandee, D. (2020). Teacher professional development to implement Global Englishes language teaching. *Asian Englishes*, *22*(1), 52-67. https://doi.org/10.1080/13488678.2019.1624931

Sen, M., Sen, S. N., & Sahin, T. G. (2023). A new era for data analysis in qualitative research: ChatGPT!. *Shanlax International Journal of Education, 11*, 1-15.

Servage, L. (2008). Critical and transformative practices in professional learning communities. *Teacher Education Quarterly, 35*(1), 63-77. https://www.jstor.org/stable/23479031

Sifakis, N. (2007). The education of teachers of English as a lingua franca: A transformative perspective. *International Journal of Applied Linguistics*, 17(3), 355-375.

Sifakis, N., & Kordia, S. (2019). Promoting transformative learning through English as a lingua franca: an empirical study. In F. Finnegan, T. Fleming & A. Kokkos (Eds.), *Transformative learning in Europe: Perspectives and practices* (pp. 177-192). Palgrave Macmilan.

Sturgill, A., & Motley, P. (2014). Methods of reflection about service learning: Guided vs. free, dialogic vs. expressive, and public vs. private. *Teaching and Learning Inquiry, 2*(1), 81-93. https://doi.org/10.2979/teachlearninqu.2.1.81

Uyar, T., & Erozan, F. (2024). English as a foreign language (EFL) teachers' voices: English as an International Language (EIL) in Cyprus context. *Sage Open*, *14*(3). https://doi.org/10.1177/21582440241271170

Wachinger, J., Bärnighausen, K., Schäfer, L. N., Scott, K., & McMahon, S. A. (2024). Prompts, pearls, imperfections: Comparing ChatGPT and a human researcher in qualitative data analysis. *Qualitative Health Research*. Art. No: 10497323241244669. https://doi.org/10.1177/10497323241244669

Walsh, A. J. (2017). Using a community of practice approach to understand collaborative knowledge development amongst mental health nurse students and practitioners [*Unpublished Doctoral Dissertation*]. University of Birmingham.

Yılmaz Şengöz, M., & İnal, D. (2023). ELF or EFL: Perceptions, beliefs, and teaching practices of Turkish EFL teachers. *Hayef: Journal of Education (Online)*, *20*(3).