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Social Studies Teachers' Self-Efficacy Levels in Creating Digital Materials

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Abstract: The change and transformation in the world of technology also affect the field of education. This effect has brought about changes in the teaching materials used by teachers in their classes. Teachers can design effective teaching materials more easily by using the opportunities offered by technology. This study aims to examine social studies teachers' self-efficacy levels in creating digital materials in terms of various variables. The research was designed according to the survey design, one of the quantitative research designs. A convenience sampling method was used to determine the participants. In the study, the digital material creation competences of 208 (121 female, 87 male) social studies teachers were evaluated according to the variables of gender, age, professional seniority, and region of assignment. The Teachers' Self-Efficacy Scale for Creating Digital Materials was used as a data collection tool. Independent Samples t-test and One-Way ANOVA were used to analyse the data obtained from this scale. The findings show that teachers generally have self-efficacy above the average. No significant difference was found in terms of gender, age and professional seniority variables. This result shows that social studies teachers have similar self-efficacy levels in terms of gender, age and professional seniority variables. However, in terms of the region of assignment, the self-efficacy levels of teachers working in the Black Sea Region were higher than in some regions (Marmara, Central Anatolia, Eastern Anatolia, and South-eastern Anatolia). These findings suggest that regional disparities may influence the degree of technology integration in educational practices. The researchers suggest that professional development programmes to increase teachers' digital material development skills should be expanded.

Keywords: Social Studies, Teacher, Digital Material, Self-Efficacy.

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Introduction

In the contemporary era, characterised by accelerated transformation in the domain of technology, individuals find themselves navigating a dynamic and evolving landscape. This rapid change and transformation have a profound effect on both daily life and educational processes. Technological advances and innovations have accelerated transformations in the contemporary educational environment. In particular, the radical changes in Information and Communication Technologies (ICT) such as computers, mobile phones and the internet have led to a renaissance in educational technologies (Escueta et al., 2017). Concurrently, the internet has been a catalyst for substantial change by establishing a substantial and novel technological domain for teaching and learning processes over the past two decades (Kalaian, 2017). In recent years, mobile technologies, virtual and augmented realities, simulations, collaborative learning platforms, social networks, cloud computing, flipped classroom applications, and the diversity of different devices have been increasing rapidly (Huang, Spector & Yang, 2019).

Technological developments today offer significant opportunities in the field of education, as in many other areas (Kaya, 2008). In order to make effective use of these opportunities, technology is being integrated into teaching processes in various disciplines. One of the fundamental goals of contemporary educational approaches is to nurture individuals who can keep pace with rapid changes in science and technology. In this regard, progressivism (Kaya, 2020), one of the prominent approaches, envisages teaching programmes with a more integrated structure by supporting interdisciplinary cooperation (Erginer, 2021). In this context, the social studies course, which is designed with an interdisciplinary perspective, constitutes a concrete reflection of this understanding. According to Farris (2015), technology functions as one of the fundamental elements of interdisciplinary education and makes significant contributions to social studies education by integrating content from different disciplines around a common goal.

As Martorella (1997) noted, technology has been described as a “sleeping giant” in the context of social studies education programmes. This metaphor draws attention to the untapped potential of technology in the context of social studies teaching and learning. As posited by Swan and Hofer (2008), this metaphor signifies that the potential of technology in the field of education is not being fully realised. Doolittle and Hicks (2003) posited that this sleeping giant has been waiting to be awakened for a considerable period of time. The National Council for Social Studies (NCSS) (1994) advocates the integration of technology into social studies classrooms, emphasising that such integration has the potential to add new dimensions to student learning. However, despite the NCSS’s advocacy for this approach, for many years it has been observed that no substantial progress has been made in this domain, with various impediments persisting (Doolittle & Hicks, 2003; Whitworth & Berson, 2002).

In recent years, there has been an increased focus among researchers on the integration of technology into social studies education (Bariham, 2022; Çetin & İşçi, 2022; Friedman & Hicks, 2006; Underwood, 2022). Adler (2008) has demonstrated a correlation between the increase in research in this area and the proliferation of teacher training programmes and technology-related studies. However, research in the field of technology integration in social studies education has not yet achieved the desired level of advancement. Consequently, the integration of technology into social studies education is of significant importance. This is because such integration can facilitate the development of both students and teachers (Torrez, 2010). In addition technology offers an exciting opportunity for proponents of change in social studies education to transition towards student-centred pedagogical approaches (Beck & Eno, 2012).

Research conducted in the field has emphasised the significance of integrating technology into social studies teaching programmes (Bennett, 2005; Berson & Balyta, 2004; Byker, 2014; Crowe, 2004; Cuban, 2001; Mason et al., 2000; Stobaugh & Gandy, 2014). The effective integration of technology into the social studies curriculum has been demonstrated to enhance pedagogical practices, thereby increasing student motivation and equipping individuals with the knowledge, skills, and values necessary to become good citizens. This aligns with the fundamental objectives of social studies, as outlined by Heafner (2004).

Social studies teachers are among the most significant agents in the integration of technology in the social studies curriculum. The fundamental purpose of teaching and learning social studies is to assist students in reflecting on their current identity and future potential as citizens (Duplass, 2020). Technology plays a significant role in this process with regard to citizenship education. The utilisation of educational technologies by social studies teachers in their classrooms facilitates the establishment of constructivist learning environments and the cultivation of 21st-century skills (Kormos, 2019). The integration of technology into the social studies classroom has the potential to stimulate diverse forms of student development. As Chai and Kong (2017) emphasised, critical thinking, problem-solving and communication skills are all at higher levels in social studies classrooms where technology use is intensive. The increasing accessibility of technology has the potential to engender a major transformation in social studies education. The integration of technology into social studies lessons can be facilitated by the utilisation of digital materials. In the contemporary context, the pedagogy of social studies incorporates not only tangible materials but also technological resources. This is since technological materials have been shown to enhance students' interest and motivation in social studies classes (Bass & Rosenzweig, 1999). Suryani et al. (2021) determined that digital learning materials in the field of social studies education are more effective in developing students' social skills than printed textbooks. Furthermore, it has been observed that digital materials have the capacity to enhance critical thinking skills in social studies lessons (Khoiron et al., 2021). In another study, social studies teachers highlighted that digital teaching materials effectively support teaching and learning processes (Sariyatun et al., 2018).

The acquisition of digital materials for use in social studies lessons is typically undertaken by teachers either through the creation of original content or the utilisation of pre-existing materials. However, it is imperative to acknowledge that ready-made materials require constant updating to maintain alignment with the evolving curriculum and the shifting levels of students. Consequently, educators must possess the competencies to both create and revise digital materials, whether they are original or obtained from pre-existing sources. In this context, ascertaining the levels of self-efficacy among social studies teachers in the creation of digital materials is of critical importance in comprehending the present status of technology integration in education and in identifying teachers' professional development requirements. Digital material development competence encompasses not only technology use skills but also pedagogical knowledge and digital content creation skills. Consequently, an examination of social studies teachers' self-efficacy levels in creating digital materials in terms of various variables will contribute significantly to the enhancement of future teacher education programmes and the more effective implementation of digital transformation in education. In this regard, the purpose of this study is to ascertain the levels of self-efficacy concerning the creation of digital materials exhibited by social studies teachers. In this context, answers to the following questions were sought.

- What is the level of social studies teachers' self-efficacy in creating digital materials?
- Does the level of social studies teachers' self-efficacy in creating digital materials differ according to gender?
- Does the level of social studies teachers' self-efficacy in creating digital materials differ according to age?

- Do social studies teachers' levels of self-efficacy in creating digital materials differ according to the region where they work?
- Do social studies teachers' levels of self-efficacy in creating digital materials differ according to their professional seniority?

Method

This study examines the self-efficacy levels of social studies teachers in creating digital materials. The research was designed according to the survey model, one of the quantitative research methods. In this non-experimental design, the aim is to measure certain characteristics of the group under investigation or to reveal an existing situation (Atalmış, 2021). Surveys allow for gathering information about a broader population using data obtained from a systematically determined sample (Rossi et al., 2013). While survey studies measure the variables in question, they also help analyse the relationships between these variables, make predictions about them, and understand how subgroups vary (Christensen et al., 2015). Since this study aimed to determine the self-efficacy levels of social studies teachers in creating digital materials and to reveal how these levels vary according to certain predetermined variables, the research was conducted using a survey design.

Sample

The study included 208 social studies teachers, comprising 121 females and 87 males. The research employed convenience sampling as the sampling method. This approach, which enhances the speed and practicality of the study, is based on including the most easily accessible units from which data can be collected (Altındış & Ergin, 2018; Yıldırım, 2021). Participants included social studies teachers from different geographical regions, with varying years of professional experience, representing different age groups and genders. The demographic characteristics of the participating teachers are presented in Table 1.

Table 1. Demographic Characteristics of Social Studies Teachers

Category	Subcategory	f	%
Gender	Female	121	58.2
	Male	87	41.8
	Total	208	100.0
Age	25-35 years	102	49.0
	36-45 years	48	23.1
	46-55 years	45	21.6
	56+ years	13	6.3
	Total	208	100.0
Geographic Region	Marmara Region	64	30.8
	Aegean Region	40	19.2
	Mediterranean Region	28	13.5
	Central Anatolia Region	17	8.2
	Southeastern Anatolia Region	14	6.7
	Eastern Anatolia Region	31	14.9
	Black Sea Region	14	6.7
	Total	208	100.0
Professional Seniority	1-5 years	96	46.2
	6-10 years	54	26.0
	11-15 years	34	16.3
	16+ years	24	11.5

Total	208	100.0
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Data Collection Tool

For data collection, the Teachers' Self-Efficacy Scale for Creating Digital Materials (TSES-CDM), developed by Uzun and Akay (2021), was employed as the measurement instrument. The scale consists of 26 items and demonstrated excellent reliability in this study, with a Cronbach's alpha coefficient of .973, indicating it can be considered a highly reliable data collection tool.

Items on the TSES-CDM are scored on a 0–100-point scale with 10-point increments, where 0 represents “No confidence at all” and 100 represents “Complete confidence”.

The data collection instrument was administered to participating teachers via Google Forms. All 208 social studies teachers in the sample completed the scale in its entirety. The responses were then digitised and prepared for statistical analysis.

Data Analysis

For data analysis in this study, the SPSS statistical software package was utilised. Normality tests revealed that the data were normally distributed. The results of the normality tests are presented in Table 2.

Table 2. *Kolmogorov-Smirnov, Skewness, and Kurtosis Values for the TSES-CDM*

Skewness		Kurtosis	
Skewness	Std. Error	Kurtosis	Std. Error
0.584	0.169	-0.967	0.336

As seen in Table 2, while the skewness and kurtosis values of the data obtained with the Teachers' Self-Efficacy Scale for Creating Digital Materials fell within the normal distribution range (Tabachnick, 2007). Consequently, parametric tests were employed for data analysis. The Independent Samples t-test was used to examine differences between two groups on a given variable, while the One-Way ANOVA test was applied for comparisons among three or more groups.

Findings

The research data were analysed to evaluate social studies teachers' self-efficacy levels in creating digital materials across variables of professional experience, age, gender, and geographic region. According to descriptive statistics from the TSES-CDM (Teachers' Self-Efficacy Scale for Creating Digital Materials), participants (208 teachers) had a mean score of 178.269.

To determine whether social studies teachers' scores on the Teachers' Self-Efficacy Scale for Creating Digital Materials (TSES-CDM) differed significantly by gender, an Independent Samples t-test was conducted. The analysis results are presented in Table 3.

Table 3. Independent Samples t-Test Results for TSES-CDM Scores by Gender

Gender	n	\bar{x}	Sd	df	t	p
Female	121	180,3223	44,83474	206	835	.405

Gender	n	\bar{x}	Sd	df	t	p
Male	87	175,4138	37,16323			

Findings from Table 3 reveal that social studies teachers' self-efficacy in creating digital materials, as measured by the TSES-CDM ($t_{206} = .835$, $p > .05$), did not show statistically significant differences by gender. To determine whether social studies teachers' scores on the Teachers' Self-Efficacy Scale for Creating Digital Materials differed significantly by age group, a One-Way ANOVA was conducted. The analysis results are presented in Table 4.

Table 4. One-Way ANOVA Results for TSES-CDM Scores by Age Group

Groups	Sum of Squares	df	Mean Square	F	p
Between Groups	49040,075	3	1646,692	,943	.421
Within Groups	356272,849	204	1746,436		
Total	361212,923	207			

As presented in Table 4, the One-Way ANOVA revealed no statistically significant differences in TSES-CDM scores based on age ($F_{3-204}=943$, $p = .421$). To determine whether social studies teachers' scores on the Teachers' Self-Efficacy Scale for to examine whether creating digital materials differed significantly by geographic region, a one-way ANOVA was conducted. The analysis results are presented in Table 5.

Table 5. One-Way ANOVA Results for TSES-CDM Scores by Geographic Region

Groups	Sum of Squares	df	Mean Square	F	p	Post-hoc Differences
Between Groups	44486,069	6	7414,345	4,705	.000	Black Sea > Marmara, Central Anatolia, Eastern Anatolia, Southeastern Anatolia
Within Groups	316726,854	201	1575,755			
Total	361212,923	207				

As shown in Table 5, TSES-CDM scores showed statistically significant differences by geographic region ($F_{6-201}=4,705$, $p=000$). Post-hoc comparisons revealed that teachers working in the Black Sea region had significantly higher TSES-CDM scores than those in the Marmara, Central Anatolia, Eastern Anatolia, and Southeastern Anatolia regions ($p < .05$). Participants were divided into five groups based on 5-year intervals of teaching experience. To examine whether social studies teachers' self-efficacy in creating digital materials differed significantly by professional experience, One Way ANOVA was conducted. The results are presented in Table 6.

Table 6. One-Way ANOVA Results for TSES-CDM Scores by Professional Seniority

Groups	Mean Squares	df	Mean Square	F	P
Between Groups	2573,090	3	857,697	,488	.691
With in Groups	358639,833	204	1758,038		
Total	361212,923	207			

As shown in Table 6, the One-Way ANOVA revealed no statistically significant differences in the TSES-CDM scores of social studies teachers across professional seniority groups ($F_{3-204}=,488$, $p = .691$).

Conclusion, Discussion and Recommendations

The present study examines the levels of self-efficacy of social studies teachers with regard to the creation of digital materials. The findings indicate that social studies teachers have above-average competence in creating digital materials. Gökbulut et al. (2021) found that teachers' competence levels in the design of digital materials were moderate. A parallel investigation revealed that educators' competencies in the design of digital materials were found to be at a commendable level (Demircioglu & Yurt, 2024). A further study established that Science and Art Centres teachers demonstrated a high level of digital material design competence (Gökbulut & Keserci, 2024). This finding suggests that social studies teachers can produce digital materials by keeping up with technological developments.

The present study examined teachers' self-efficacy in creating digital materials according to the variables of professional seniority, age, gender and region of employment. The findings indicated that these variables did not generate a substantial discrepancy in teachers' self-efficacy in creating digital materials. In their 2024 study, Gökbulut and Keserci concluded that there was no significant difference in the material design competencies of teachers from Science and Art Centres based on gender and professional seniority variables. This data is consistent with the results of the present study. This finding suggests that social studies teachers demonstrate a homogeneous profile in terms of technology use and possess analogous competencies in the creation of digital materials.

The finding of marked differences concerning the region in which the research was conducted suggests that regional disparities may have an impact on access to technology and usage habits. In this context, it is noteworthy that the self-efficacy of teachers working in the Black Sea Region in creating digital materials is higher than in some other regions (Marmara, Central Anatolia, Eastern Anatolia, and South-eastern Anatolia). The present situation may be associated with the professional development opportunities available to teachers in the region, the infrastructure facilities available to them, or the individual efforts they make. Kaya (2008) emphasises that in order to effectively utilise technological developments in education, it is essential to enhance teachers' competencies. Consequently, there is a necessity to undertake a review of teacher education programmes to take regional differences into account.

In conclusion, it is recommended that professional development programmes be expanded to further improve social studies teachers' self-efficacy in creating digital materials that strategies be developed to address regional differences, and that technological infrastructure be improved. Furthermore, it would be useful for future research to examine in depth the relationship between self-efficacy in creating digital materials and teachers' classroom practices.

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