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The Mediating Role of Attitude towards Digital Technology in the Relationship between Digital Citizenship and Motivation in Social Studies Course

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Abstract

The aim of this study is to clarify the mediating role of attitudes towards digital technology in the relationship between digital citizenship in social studies class and motivation, and to provide an important perspective for educators. The research was conducted using a correlational survey model to reveal the relationships between digital citizenship in social studies class, motivation, and attitudes towards digital technology. The study group consisted of 409 sixth and seventh-grade students attending a public school affiliated with the Ministry of National Education in Oltu district, Erzurum, during the 2022-2023 academic year. The sample size was determined using disproportionate stratified sampling technique, with a sufficiency level of 95% confidence, calculated as a minimum of 374. Accordingly, the target was to reach 420 students. However, due to some missing data during the data collection process, data from 409 students were used. After eliminating 21 data with outlier characteristics, 388 valid data were used for the analysis. Of the participating students, 212 (51.8%) were male, and 197 (48.2%) were female. The Digital Citizenship Scale, Social Studies Class Motivation Scale, and Attitudes Towards Digital Technology Scale were used for data collection in the study. Descriptive statistics, including means and coefficients, were used for data analysis. The data collected in the study were analyzed using SPSS 20 and Lisrel 8.8 software packages. The relationships between digital citizenship, motivation in social studies class, and attitudes towards digital technology were tested using Structural Equation Modeling. The study found that attitudes towards digital technology play a significant partial mediating role in the relationship between digital citizenship and motivation in social studies class.

Keywords: digital citizenship, social studies class motivation, attitudes towards digital technology.

1. Introduction

We are living in an era where digital technologies are integrated into every aspect of our lives with the advancement of the digital age. This has deeply impacted the field of education and has brought about many areas that require the acquisition of new skills (Al Salman, Alkathiri & Khaled Bawaneh, 2021; Reddy, Sharma & Chaudhary, 2020). One of these areas is digital citizenship. Digital citizenship refers to the skills and awareness that enable individuals to act ethically, safely, and responsibly in the digital world. Social studies, on the other hand, provides an important foundation for digital citizenship education as it aims to teach students societal values, ethical principles, and democratic participation. Motivation towards the social studies

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class is also an important factor that affects students' interest in the content, participation, and willingness to achieve learning goals (Searson, Hancock, Soheil & Shepherd, 2015). Having high motivation towards social studies lessons enables students to achieve the goals of the lesson more effectively and, therefore, contributes to the development of their digital citizenship skills.

The relationship between motivation towards social studies lessons and digital citizenship is a very important and complex issue. Motivated students focus more on the content of the lesson, actively participate in the class, and process their learning more in-depth. This can positively affect the process of developing students' digital citizenship skills. For example, understanding and adopting ethical and responsible behaviors required for digital citizenship can be achieved with a relevant and conscious attitude towards digital technologies (Jiang, Rosenzweig & Gaspard, 2018; Ribble, 2011). In today's digital age, the rapid development and widespread use of digital technologies have had profound effects on almost every segment of society. One of these effects is felt in the field of education. Social studies lessons, on the other hand, provide an important ground for digital citizenship education as a lesson aimed at teaching students democratic values, human rights and social responsibilities (Karaduman & Öztürk, 2014).

Motivation during the educational process is a critical factor that influences students' willingness and effort to achieve success. Motivation is an internal drive that enables students to actively engage in the learning process and supports them in reaching their goals (Algahtani, Zrieq, Aldhmadi, Atta, Obeidat & Kadri, 2021). Social studies aim to equip students with the skills to understand, interpret, and evaluate the functioning of society, as well as historical and cultural values. This subject holds great importance in fostering students' awareness of societal issues, embracing democratic values, and becoming active citizens (Doğan, 2021; Kulakaç, 2020; Solmaz & Çekim, 2017). At this point, motivation towards social studies is a critical factor that influences students' level of interest and commitment to the course content. The motivation towards social studies affects students' interest in the course content, their desire to achieve learning goals, and their efforts in studying the subject. Motivated students tend to possess higher levels of learning and comprehension skills, which in turn increases their potential for success in social studies (Compeau & Higgins, 2020; Hartnett, 2016; Pintrich, 2013; Viau, 2015). Motivation towards social studies can be influenced by various factors. Personal interests and values associated with the course content, relevance to real-world events, and the use of student-centered and interactive teaching methods can positively impact motivation. Conversely, if the course is perceived as abstract or boring, students' negative attitudes towards the course content can diminish motivation (Adeyemi & Ijiwole, 2017; Gbadamosi & Ajayi, 2018).

Attitude towards digital technology is a concept that encompasses individuals' positive or negative feelings, thoughts, and behaviors towards digital technologies (Cabı, 2015). This attitude can reflect their opinions and expectations regarding the use of digital technologies. The mediating role of attitude towards digital technology in the relationship between motivation towards social studies and digital citizenship can be a critical factor in enhancing students' digital skills and digital citizenship awareness (Cabı, 2016; Graham, 2009; Sezgin, Erdoğan & Erdoğan, 2017). The formation of attitude towards digital technology is shaped by the interaction of various factors. Individuals' experiences, educational levels, demographic characteristics, and social environments are significant components that influence their attitude towards digital technology. For instance, a person's past experiences and abilities can impact their attitude towards digital technology positively or negatively. Additionally, it has been observed that as the level of education and knowledge increases, individuals' attitudes towards digital technologies become more conscious and informed (Gokhale, Brauchle & Machina, 2013; Wiley, Bliss & McEwen, 2014).

The importance of attitude towards digital technology is crucial in today's digital world for effective functioning. With the rapid development of digital technologies, individuals need to adapt to these technologies and use them effectively. A positive attitude towards digital technology

enables individuals to adapt to technology faster and improve their digital skills (Davies & West, 2014; Vizenor, 2014).

Furthermore, a positive attitude towards digital technology can help individuals navigate the digital world in an ethical and secure manner. Motivation towards social studies influences students' interest in course content, active participation, and willingness to achieve learning goals, while digital citizenship refers to individuals' ability and awareness to use digital technologies ethically, securely, and responsibly (Farmer, 2011; Şendağ & Uysal, 2010). Therefore, the mediating role of attitude towards digital technology in the relationship between these two factors is essential. This article's main focus is on how students' attitudes towards digital technologies affect their motivation towards social studies and how this interaction plays a mediating role in acquiring digital citizenship skills (Adeyemi & Ijiwole, 2017; Kim, Xie & Cheng, 2017).

The aim of this study is to clarify the mediating role of attitude towards digital technology in the relationship between digital citizenship in social studies and motivation, providing educators with an important perspective. The findings obtained from this study can offer valuable guidance for education policies and practices, indicating how digital citizenship education should be focused. Additionally, it can contribute to identifying strategies that can shape students' attitudes towards digital technologies and enhance their motivation.

Three hypotheses developed in line with the research aim were tested:

(1) Digital citizenship in social studies positively predicts motivation towards the course.

(2) Digital citizenship in social studies positively predicts attitude towards digital technology.

(3) Attitude towards digital technology partially mediates the relationship between digital citizenship in social studies and motivation towards the course.

2. Method

2.1 *Research design*

The study was conducted using a correlational survey design to examine the relationships between digital citizenship in social studies, motivation towards the course, and attitude towards digital technology. In a correlational survey design, the aim is to determine the degree of simultaneous change between two or more variables (Karasar, 2014). To test the relationships within the scope of the study, a hypothetical model, as shown in Figure 1, was determined. In this model, the mediating effect of attitude towards digital technology was evaluated in the relationship between digital citizenship in social studies and motivation towards the course.

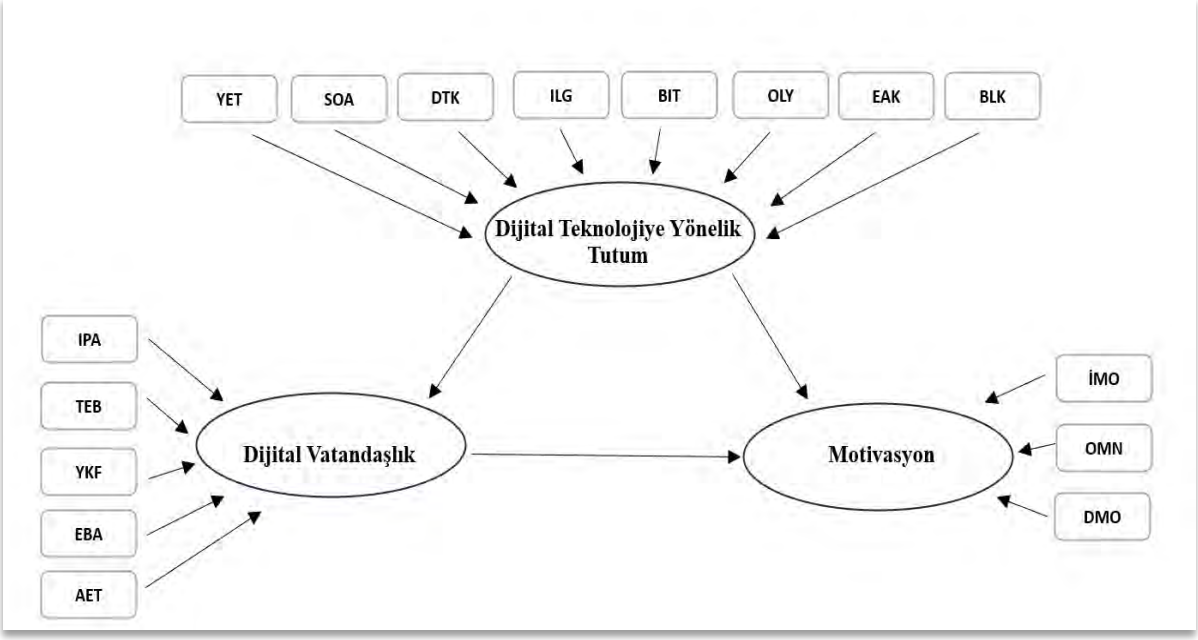

Figure 1. Hypothetical model

IPA: Internet Political Activism subscale of Digital Citizenship Scale; TEB: Technical Knowledge subscale of Digital Citizenship Scale; YKF: Local/Global Awareness subscale of Digital Citizenship Scale; EBA: Critical Perspective subscale of Digital Citizenship Scale; AET: Network Efficiency subscale of Digital Citizenship Scale; YET: Competence subscale of Attitude towards Digital Technology Scale; SOA: Social Networks subscale of Attitude towards Digital Technology Scale; DTK: Technology Use in the Classroom subscale of Attitude towards Digital Technology Scale; ILG: Interest subscale of Attitude towards Digital Technology Scale; BIT: Technology for Me subscale of Attitude towards Digital Technology Scale; OLY: Negative Aspects subscale of Attitude towards Digital Technology Scale; EAK: Entertainment Use subscale of Attitude towards Digital Technology Scale; BLK: Conscious Use subscale of Attitude towards Digital Technology Scale; IMO: Intrinsic Motivation subscale of Motivation towards Social Studies Scale; OMN: Importance subscale of Motivation towards Social Studies Scale; DMO: Extrinsic Motivation subscale of Motivation towards Social Studies Scale.

2.2 *Study group*

The study group consisted of 409 sixth and seventh-grade students attending a state school affiliated with the Ministry of National Education in the Oltu district of Erzurum province during the 2022-2023 academic year. The sample was determined using the disproportionate cluster sampling technique, and the sample size required for a 95% confidence level was calculated to be a minimum of 374. Therefore, data were collected from 409 students. Although the plan was to reach 420 students, there were some deficiencies in the data collection process. After removing 21 data points showing outlier characteristics, 388 valid data were used for the analyses. Out of the participating students, 212 (51.8%) were male, and 197 (48.2%) were female.

2.3 *Data collection instruments*

The data for the study was collected using three scales: Motivation towards Social Studies Scale, Digital Citizenship Scale, and Attitude towards Digital Technology Scale.

2.3.1 *Motivation towards social studies scale*

The scale consists of 23 items and includes three subscales: “intrinsic motivation,” “extrinsic motivation,” and “importance.” The Cronbach’s alpha reliability coefficient for the overall scale was found to be .792. Reliability calculations were also performed for the subscales, with .802 for intrinsic motivation, .745 for extrinsic motivation, and .826 for importance. These values represent the reliability coefficients used to measure the consistency of the scale items within the subscales. The scale was reported to account for 41% of the total variance, indicating that the scale items effectively represent the measured concept (Gömleksiz & Kan, 2012).

2.3.2 *Digital citizenship scale*

After obtaining permission for adaptation, the scale was translated into Turkish by three experts proficient in both languages. Subsequently, two experts performed reverse translations. After corrections made by an expert with language and domain expertise, the scale was sent to Turkish experts for further corrections regarding spelling, expression, and wording. Ethical committee approval was obtained for the implementation of the scale. To determine the language equivalence validity of the scale, the Turkish and English versions of the scale were applied to 3rd-year students studying English teaching at a state university at three-week intervals. Significant correlations between .61 and .78 ($p < .01$) were found for dimensions and the overall scale in both measurements. Next, data were collected from 272 students studying at seven different universities to test the validity and reliability of the scale in different samples. Confirmatory factor analysis conducted to test construct validity resulted in the removal of 8 items from the scale. The analysis indicated that the item-total correlation values were above .30, and the fit indices of the scale ranged from moderate to excellent fit. The internal consistency test for evaluating the reliability of the scale yielded a Cronbach’s alpha value of .87. The Cronbach's alpha values for the factors were found to be .86, .93, .83, .80, and .73, respectively. Based on the analyses, it was concluded that the 18-item Digital Citizenship Scale, organized under five factors, is a valid and reliable measurement tool (Erdem & Koçyiğit, 2019).

2.3.3 *Attitude towards Digital Technology Scale*

In this study, a scale was applied to 689 high school students, and the validity and reliability of the scale were tested. To determine the validity and reliability, scope validity, construct validity, t-test, corrected item-total correlations, Cronbach’s alpha internal consistency coefficient, and two half-test correlations were examined. Additionally, the factor structure of the scale was tested through confirmatory factor analysis, and acceptable fit was achieved. According to the analysis results, the scale consists of 39 items with an eight-factor structure. The factors were named as “competence,” “social networks,” “technology use in the classroom,” “interest in technology,” “technology for me,” “negative aspects,” “entertainment use,” and “conscious use.” These factors correspond to the names used in the subscales of similar scales. For example, the “competence” subscale was also included in the previously developed “Digital Literacy Scale.” Moreover, the designations like “social networks” and “entertainment use” are commonly encountered factors in adolescents’ computer activities. The corrected item-total score correlations of the factors range from 0.31 to 0.73, and Cronbach's alpha coefficients range from 0.86 to 0.61. T-test results indicate significant differences between the upper 27% and lower 27% groups in terms of item means. These findings support that the scale performs well in terms of validity and reliability (Cabı, 2016).

2.4 *Data analysis*

In this study, descriptive statistics such as means and coefficients were utilized. For the evaluation of structural model tests, goodness-of-fit values were considered. The cutoff points for goodness-of-fit values are as follows: <0.08 for SRMR, <0.10 for RMSEA, ≥0.90 for CFI, IFI, NNFI, and GFI (Kline, 1998; Schumacher & Lomax, 2004). Additionally, the cutoff point for the X^2/df ratio was set at 5. The data obtained in the research were tested using SPSS 20 and Lisrel 8.8 software packages. The chosen statistical significance level for all analyses was 0.05.

3. Findings

3.1 *Hypothetical model test*

In the scope of this research, a structural model has been determined (Figure 1). In this model, the latent variable "Digital Citizenship" is represented by the scores obtained from the Digital Citizenship Scale items. The latent variable "Motivation" is similarly represented by the total scores of the sub-dimensions of the Social Studies Lesson Motivation Scale. Likewise, the latent variable "Attitude towards Digital Technology" is based on the total scores of the sub-dimensions of the Attitude towards Digital Technology Scale. Table 1 provides descriptive statistics for the observed variables included in the model.

Table 1. Descriptive statistics for variables in structural models

Sub-dimensions	$\bar{X}$	Ss	Skewness	Kurtosis
IPA	3.26	0.67	-0.53	0.89
TEB	3.41	0.68	-0.68	-0.08
YKF	3.41	0.69	-0.66	0.30
EBA	2.99	0.79	-0.36	-0.41
AET	2.76	0.80	0.16	-0.42
YET	3.46	0.83	-0.19	-0.51
SOA	3.46	0.89	-0.79	-0.13
DTK	23.15	4.87	-1.39	1.90
ILG	22.01	5.49	-0.75	0.21
BIT	20.64	5.70	-0.63	-0.09
OLY	23.32	4.20	-1.20	3.22
EAK	20.61	6.32	-0.69	-0.35
BLK	22.64	4.89	-1.42	1.61
IMO	7.37	4.91	1.49	3.60
OMN	76.32	16.50	-0.69	0.79
DMO	62.13	13.61	0.00	-0.08

The kurtosis and skewness values for the distribution of the data were examined. In general, in social sciences, it is expected that skewness values fall within the range of ±1.5, and kurtosis values fall within the range of ±7 (Field, 2013; Tabachnick & Fidell, 2013). Upon examining the skewness and kurtosis values obtained in this study, it is observed that the skewness values range from -1.42 to 1.49, and the kurtosis values range from -0.51 to 3.60. These values fall within acceptable limits for datasets demonstrating normal distribution.

Table 2. Relationships between variables

Sub dimension	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
IPA	-														
TEB	.320**	-													
YKF	.353**	.465**	-												
EBA	.389**	.416**	.581**	-											
AET	.374**	.316**	.430**	.556**	-										
YET	.370**	.372**	.389**	.511**	.543**	-									
SOA	.239**	.166**	.243**	.192**	.122**	.146**	-								
DTK	.343**	.238**	.276**	.245**	.176**	.223**	.245**	-							
ILG	.439**	.296**	.321**	.349**	.311**	.310**	.222**	.752**	-						
BIT	.324**	.235**	.249**	.316**	.281**	.312**	.082	.711**	.705**	-					
OLY	.352**	.117**	.179**	.136**	.152**	.089	.112**	.599**	.572**	.481**	-				
EAK	.269**	.181**	.233**	.217**	.251**	.195**	.079	.469**	.652**	.470**	.517**	-			
BLK	.165**	0.06	0.09	-0.09	0.08	-0.08	-0.05	.151**	.227**	.130**	.461**	. 370**	-		
IMO	-.347**	-.224**	-.184**	-0.79**	-.125**	-0.09	-0.08	-.392**	-.362**	-.309**	-.176**	-.347**	-.133**	-	
OMN	.480**	.240**	.370**	.347**	.367**	.396**	.283**	.335**	.236**	.395**	.461**	.435**	.300**	.292**	-
DMO	.402**	.350**	.399**	.396**	.283**	.333**	.236**	.395**	.462**	.434**	.306**	. 351**	0.09	-.280**	.664**

Multiple collinearity is a situation that can arise in a regression model due to high correlation between variables. It occurs when there is a strong relationship among independent variables. In such cases, when there is a very high correlation observed between independent variables, it can mislead the results of the regression model and produce unreliable predictions. Based on the information in the table, it has been indicated that in this study, when controlling for multiple collinearity among the examined variables, none of the variable pairs have a correlation coefficient higher than 0.90. This indicates that the regression model will produce statistically more reliable results. The correlation values between the dependent and independent variables range from 0.52 to 0.63, indicating a moderate level of relationship between the variables.

Table 3. Correlations among latent variables

Latent Variables	1	2	3
Digital Citizenship	-		
Attitude Towards Digital Technology	.52*	-	
Motivation Towards Social Studies Course	.60*	.63*	-

*p<.01.

When examining the correlation values obtained in this study, it was stated that all correlation coefficients are statistically significant. This indicates that there is a relationship between the variables under investigation, and this relationship is not due to random chance. The highest correlation coefficient among the latent variables was observed between motivation towards the social studies course and attitude towards digital technology (r=.63, p<.01). This result indicates that as the attitude towards digital technology increases, motivation towards the social studies course also increases. The lowest correlation coefficient was observed between digital citizenship and attitude towards digital technology (r=.52, p<.01). This result shows that there is a weaker relationship between the level of digital citizenship and attitude towards digital technology. Since both correlation coefficients are statistically significant, it can be concluded that there is a positive relationship between these variables and an increase in one variable is associated with an increase in the other. However, since the correlation coefficient between motivation

towards the social studies course and attitude towards digital technology is higher, it can be said that the relationship between these two variables is stronger.

In this study, a two-stage approach was adopted, and it was mentioned that the measurement model was tested before testing the structural model (Figure 1). According to the results of the measurement model analysis, the goodness-of-fit indices are as follows: χ2/df (598.98/128) = 4.67, p=.001, IFI=.94, NNFI=.93, CFI=.94, GFI=.86, SRMR: .076, RMSEA=.095 (RMSEA confidence interval = .088–.11). These goodness-of-fit indices are considered acceptable. The goodness-of-fit indices indicate that the measurement model is consistent with the data and that the model fits well. The standardized path coefficients obtained in the measurement model are presented in Figure 2. These results indicate that the measurement model fits the data and is ready to be tested for the structural model.

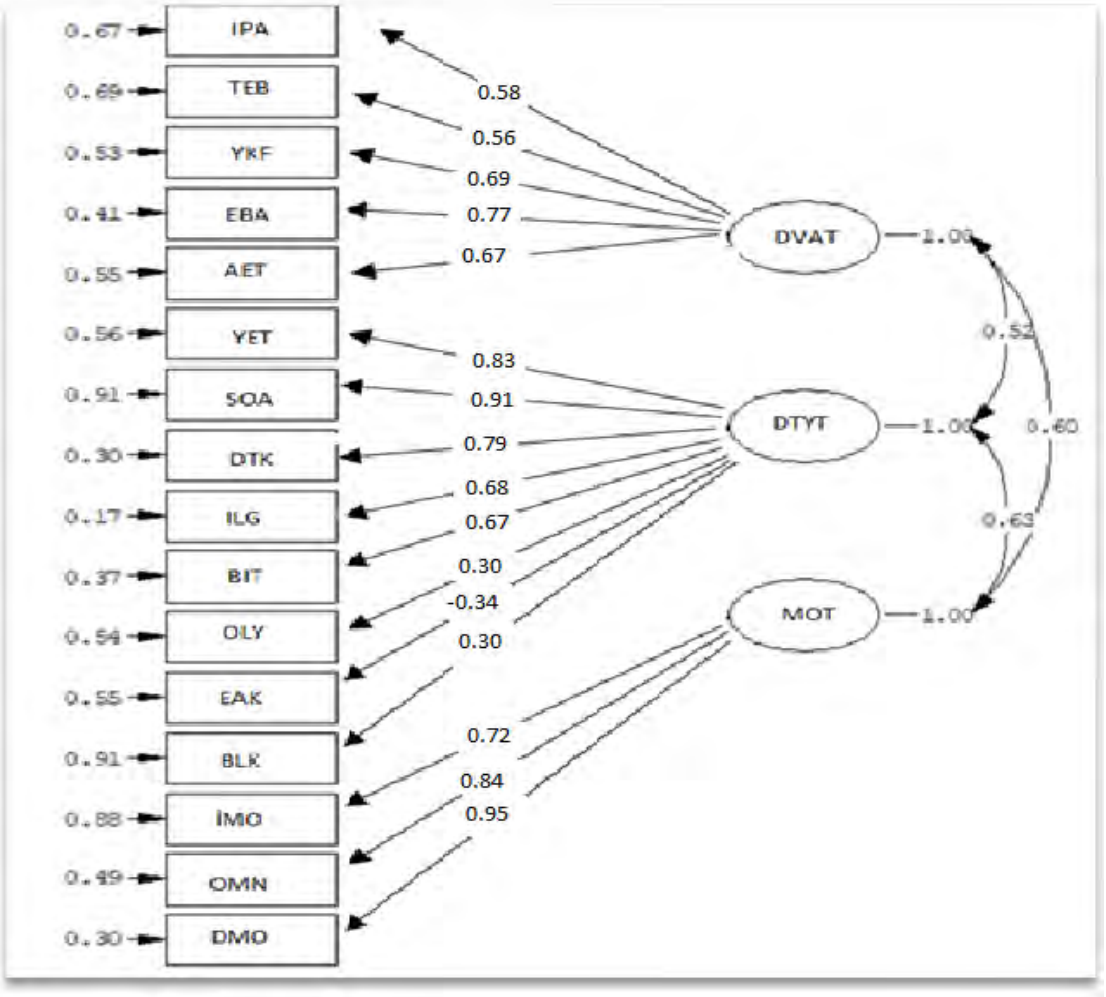

Figure 2. The standardized path coefficients for the measurement model

The structural model presented in Figure 1 was tested in the scope of the research, and the analysis results indicated the following goodness-of-fit values: χ2/df (598.98/128) = 4.67, p=.001, IFI=.94, NNFI=.93, CFI=.94, GFI=.86, SRMR: .076, RMSEA=.095 (confidence interval for RMSEA = .088–.11). These goodness-of-fit values demonstrate that the tested structural model fits the data at an acceptable level. The standardized path coefficients obtained from the structural model analysis are presented in Figure 3. These coefficients represent the relationships between variables. According to the analysis results, digital citizenship has a significant predictive effect on social studies motivation (β=.38, p<.01) and digital technology attitude (β=.52, p<.01).

Additionally, digital technology attitude has a significant predictive effect on social studies motivation (β=.43, p<.01). These findings indicate that the structural model is consistent with the data and significantly explains the relationships between variables. We can conclude that there is a complex relationship among digital citizenship, social studies motivation, and digital technology attitude, and these variables predict each other.

To test the mediating effects in the research, the strategy of nested models was employed. This strategy is based on adding or removing paths related to the mediating effect from the structural model and determining the improvement or deterioration of the model using the chi-square difference test.

Firstly, it was determined that there is a path from digital citizenship to social studies motivation in the model (β=.38, p<.01). However, when the effects of other variables are not present, this path becomes (β=.60, p<.05). Next, the model was retested by removing the path from digital citizenship to social studies motivation, and the goodness-of-fit values for the revised model were as follows: χ2/df (643.60/129) = 4.98, p=.001, IFI=.93, NNFI=.94, CFI=.93, GFI=.85, SRMR: .11, RMSEA=.11 (confidence interval for RMSEA=.094–.12).

According to the chi-square difference test results, removing the path from digital citizenship to social studies motivation caused a significant deterioration in the model (Δχ2 (1, N = 388) = 43.98, p<.05). Therefore, it was decided to retain this path in the model. In the final model, it can be observed that digital technology attitude partially mediates the relationship between digital citizenship and social studies motivation.

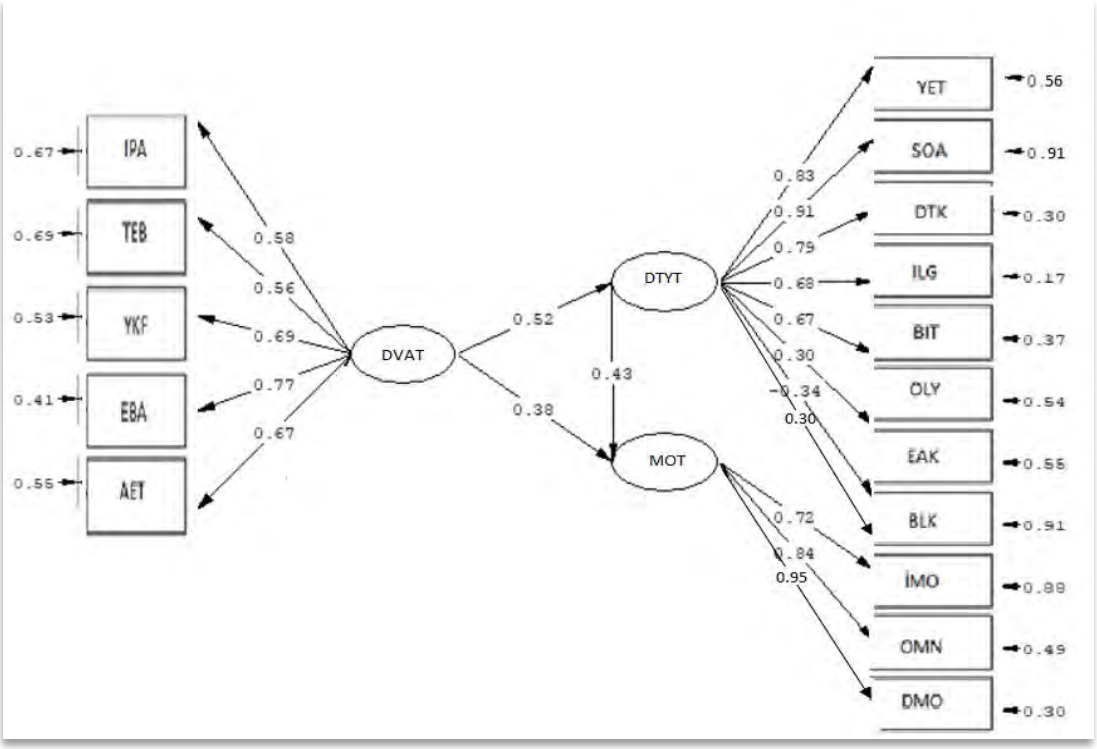

Figure 3. Standardized Path Coefficients Calculated in the Structural Model

Bootstrapping method was used to test the significance of indirect effects. This method calculates the statistical significance interval by taking a certain number of samples from the data. The findings obtained from the Bootstrapping analysis demonstrate that the indirect effects in the model are statistically significant (Table 4). Overall, when considering the explained variances, digital citizenship explains approximately 10% of the variation in digital technology attitude, while

both digital citizenship and digital technology attitude together explain about 50% of the variation in social studies motivation.

Table 4. Bootstrap test results

Independent Variable	Mediator	Dependent Variable	Path Coefficient (β)	%95 CI
Digital Citizenship	Attitude Towards Digital Technology	Motivation Towards Social Studies Course	.38* (.60*)	[.131, .287]

4. Discussion and conclusion

In this study, it has been observed that digital citizenship positively predicts motivation towards social studies. This means that as students' level of digital citizenship increases, their motivation towards social studies also increases. Students with higher levels of digital citizenship are more motivated in lessons related to this subject. In this context, it can be stated that there is a positive relationship between digital citizenship and motivation towards social studies (Choi, 2016). Studies focusing on digital citizenship (Tapingkae, Panjaburee, Hwang & Srisawasdi, 2020) emphasize the importance of motivation towards the subject matter.

The results obtained from the model indicate that the attitude towards digital technology acts as a mediator variable in the relationship between digital citizenship and motivation towards social studies. In other words, the attitude towards digital technology plays a bridge role in the relationship between digital citizenship and motivation towards social studies, effectively linking these two variables. Consistent with previous research findings, the attitude towards digital technology has a positive impact on motivation towards social studies (Isgren Karlsson, Alatalo, Nyberg & Backman, 2022). Similarly, motivation towards social studies also positively influences the attitude towards digital technology (Novikova, Bychkova & Zamaldinova, 2021). Mikelic Preradovic, Lešin & Šagud (2016) found that students' interest in digital technology enhances their motivation for learning in class. Moreover, the attitude towards digital technology positively affects academic achievement through increased motivation (Gudek, 2019). Zhong and Zheng (2023) reached the conclusion that the level of digital citizenship positively predicts motivation towards social studies.

In this study, the total scores obtained from the motivation towards social studies scale were used to measure students' motivation towards social studies. Therefore, when interpreting the findings of the study, it was taken into consideration that students' motivation towards social studies may be influenced by other variables apart from the ones examined. Banda and Nzabahimana (2023) conducted a study in which various factors influenced students' motivation towards social studies. Another research conducted by Parola (2020) segmented students' motivation profiles based on self-regulated learning strategies.

With the advancement of technology, the incorporation of digital technology in education has become crucial in fostering digital citizenship and developing related skills. Students with higher levels of digital citizenship exhibit different attitudes towards digital technology. In this context, promoting digital citizenship in education and integrating these skills into the learning process are important for enhancing effectiveness and efficiency in education and learning strategies (Choi & Cristol, 2021).

In the Turkish education system, various research findings suggest that students are encouraged to memorize information. National exams, school assessments, and some textbook questions are often at lower cognitive levels (knowledge, comprehension, and application levels), which may lead students towards superficial and rote learning strategies. Students are reported to rely on rote learning and superficial learning strategies while preparing for exams (Bilgili & Keklik,

2022). This situation may lead to student disengagement and lack of motivation in the classroom. To address this issue, incorporating digital technology in education can help students approach lessons with more motivation. In this regard, students can develop a positive attitude towards digital technology, which can positively impact their motivation in class (Pongsakdi, Kortelainen & Veermans, 2021).

The study reveals that improving students' levels of digital citizenship and their attitude towards digital technology can contribute to their motivation in social studies classes. The importance of digital citizenship is emphasized. Students with higher levels of digital citizenship are more motivated in class, adopt self-directed learning, show greater willingness to participate, and engage in cognitive evaluations during the learning process (Sitinjak, Simamora & Gultom, 2023). Students with higher levels of digital citizenship provide knowledge and awareness on how to be more effective in their learning, encouraging self-regulation. As a result, students develop the ability to use more effective learning strategies and manage their learning process more efficiently (Bilgili & Keklik, 2022).

Integrating school and classroom environments into digitalization is a pathway to enhancing students' levels of digital citizenship and their attitude towards digital technology. Such digital-oriented education can contribute to the improvement of students' knowledge and awareness of digital technology. Additionally, this approach can enhance students' attitude and motivation in class (DeFreitas & Bravo, 2012; Trolian & Jach, 2020). Nowadays, various options are available to promote students' development of digital citizenship and enhance their attitude towards digital technology in schools and classrooms (DiRamio & Payne, 2007). In digital classroom environments, students' attitudes towards digital technology differ, leading to an increase in their motivation for learning (Daungcharone, Panjaburee & Thongkoo, 2020). Studies have shown that digital technologies, active and collaborative learning environments, higher cognitive strategies, and digital journals contribute to students' motivation in digital learning environments (Jiang & Wong, 2019). Furthermore, teaching students about the awareness of being digital citizens can also contribute to their motivation in class (Srisawasdi & Panjaburee, 2019).

The study emphasizes the limitations of the conditions and data used and proposes potential improvements for future research. The fact that the study was conducted with students from a state school in the Eastern Anatolia region may affect the generalizability of the findings. Therefore, it is recommended that in subsequent research, the model be retested with study groups that include students from different schools in various regions. This would allow for more suitable results for generalization and enable comparisons between different groups.

According to the summary of this study, the importance of attitudes towards digital technology in students' motivation in social studies classes is highlighted. The study indicates that digital citizenship and attitudes towards digital technology also influence students' motivation in social studies classes. In future research, different variables can be examined in the context of their impact on motivation in relation to digital citizenship and attitudes towards digital technology.

Furthermore, the mediating effects of attitudes towards digital technology on motivation in social studies classes can also be considered. Such studies could provide valuable information for activities aimed at enhancing students' motivation in educational settings, ultimately leading to improved academic achievements. In conclusion, the study underscores that digital citizenship and attitudes towards digital technology can influence students' motivation in social studies classes, and research in these areas can provide valuable findings for the field of education. Such research can contribute to the development of educational environments that assist students in more effective learning and development.

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