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The Role of Gender, TPACK, School Support and Job Satisfaction in Predicting the Technostress Levels of Social Studies Teachers *

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Abstract

Technostress which is called a disease of the modern era has significantly increased its impact on educators due to the Covid-19 pandemic. In this period, social studies teachers also encounter technostress intensively. The aim of this study is to determine the relationships between the technostress levels of social studies teachers and the variables of gender, Technological Pedagogical Content Knowledge [TPACK], school support, and job satisfaction. The study is based on a quantitative research approach and is designed with a correlational survey model. The data of the study were obtained from 270 social studies teachers working in secondary schools. Personal information form, Technostress Scale, Technopedagogic Education Competency Scale (TPACK-deep), School Support Scale, and Minnesota Job Satisfaction Questionnaire-Short Form were used to collect the research data. In the analysis of the research data, SPSS 22.0 program was used. In the analysis of the data, descriptive statistics, Pearson correlation coefficient, and hierarchical multiple regression analysis were used. As a result of the research, it was found that gender, TPACK, school support, and job satisfaction significantly predict the technostress levels of social studies teachers. Future research may focus on how school culture can be strengthened to reduce the technostress levels of social studies teachers.

Keywords

Social Studies Teacher
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Introduction

Developments in information technology and, in particular, the fact that the number of users of the Internet exceeds 7 billion people by 2021 (Internet World Stats, 2021) within the scope of these developments have led to radical changes in many elements of human life (Kumar, Lal, Bansal, & Sharma, 2013; Riedl, Kindermann, Auinger, & Javor, 2012). This situation has also made it essential for states to realize a digital transformation in the educational processes in educational institutions (Hew & Brush, 2007). Due to this transformation, teachers who are one of the main elements of the teaching process have become expected to keep up with technological change (Zhao, Wang, Wu, & Dong, 2021) and effectively incorporate current technologies into their courses (Nelson & Hawk, 2020). The International Society for Technology in Education (ISTE, 2017) has set as a standard the incorporation of technology in courses to improve student performance by using the teacher's design ability. European

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Commission (Redecker, 2017) stated that teachers should have the ability to use digital technologies in order to maintain teaching, ensure the continuity of learning outside the classroom, for learners to use digital technologies collaboratively, and for students to have self-regulated learning. In this regard, the UNESCO (2018), expressed its desire to enrich pedagogical practices based on information and communication technologies in its report for teachers. In "General Competencies for Teaching Profession" document published by the General Directorate of Teacher Training and Development in Turkey [GDTTD], it is stated that the competencies that will require teachers to use information and communication technologies effectively in the teaching and learning process have been revealed without distinction of area (GDTTD, 2017).

It is seen that expectations for the use of information technologies in education have increased due to the effects of the Covid-19 pandemic that swept across the world in 2020, as well as the expectations of institutions, organizations, and countries. Due to the pandemic, it has become expected that teachers will exhibit their pedagogical sufficiency online with the help of various digital tools when educational processes are moved to online environments instead of being conducted face-to-face (Flores & Gago, 2020). When it comes to more details, expectations for social studies teachers to use digital tools are increasing. Although they have become more visible due to the Covid-19 pandemic, these expectations have been expressed for a long time for social studies course and social studies teachers. Before the millennium, these expectations were revealed by the National Council for the Social Studies (NCSS, 1997) and the necessity of technological competencies was mentioned in the teaching of social studies and in the process of training a social studies teacher. However, implementations and research related to social studies, social studies teacher, and technology integration were carried out in a limited framework in the first years of the millennium (Crocco, Cramer, & Meier, 2008). With the increasing importance of instructional technologies, NCSS has once again strengthened the desire of social studies teachers to have information technology among the competencies they should have (NCSS, 2013). Similarly, the principles that were revealed in the research titled "Guidelines for using technology to prepare social studies teachers" by Mason et al. (2000) are approved by the College and University Faculties Association (CUFA), a subsidiary of NCSS and it is emphasized on the ability of a social studies teacher to recognize various digital tools before starting professional life and to contribute to research on the relationship between social studies and technology. After about 15 years, the principles have been updated and emphasized more strongly that the use of technology for effective social studies teaching is inevitable, expressed the teacher's lack of instructional technology competence, which is not blended with pedagogy and content knowledge, mentioned the use of technology in the continuity of citizenship practices and the continuation of research in the field of social studies is presented as an expectation (Hicks, Lee, Berson, Bolick, & Diem, 2014). On the other hand, Curry and Cherner (2016) stated that social studies teachers remain between traditional understanding and modern designs and that they need to improve their instructional technology skills to end this dilemma. Because as a requirement of today's social studies teaching, teachers should enrich the questioning thinking process, which is the main feature of their courses with the help of digital tools (Beeson, Journell, & Ayers, 2014; Stevens, Borup, & Barbour, 2018). Despite all these expectations, there are still many obstacles to ensuring the information and communication technologies competencies of social studies teachers and including them in their courses.

It is stated that some of these obstacles are external (time limitation, lack of training on how to use technology, lack of technical support, etc.), some of them are internal (the teacher's beliefs about teaching and learning processes, the use of technology in the classroom, and his/her willingness/unwillingness to change, etc.) and some of them are caused by the teacher's lack of design thinking skills (Ertmer, 1999; Tsai & Chai, 2012). A different approach has been introduced by Belland (2009). Based on the concept of "Habitus", the researcher emphasized that incorporating technology is the reflection of the experiences gained as a result of interaction with the social environment on the teaching process and that changing habits that are not enough is the biggest obstacle. Although the obstacles to including technology in the teaching process are known, they cannot be completely eliminated. In order to achieve this, it is necessary to start from internal obstacles as a priority, especially to strengthen the teachers' beliefs about being able to include technology in the teaching process

(Tosuntaş, Çubukçu, & İnci, 2019). Another condition for success in integrating technology into learning-teaching processes is that teachers feel psychologically comfortable when they turn to technology. Because some teachers narrow down their individual areas when they spend a long time with technology, encounter more information and data than they can process or they may feel stress on themselves when they want to improve themselves technologically - more specifically in terms of changing instructional technologies - as a result of intense experiences.

This stress situation can occur at different levels in different branches because the relationship of each course with the instructional technology is different. The social studies course has a high expectation of the teacher in terms of using instructional technologies due to its multidisciplinary original structure, the fact that it incorporates many concrete and abstract concepts of different disciplines, and requires the highest level of transportation of social elements (daily life) to the classroom environment (Curry & Cherner, 2016; Debele & Plevyak, 2012; Shriner, Clark, Nail, Schlee, & Libler, 2010). In addition, the social studies teacher should obtain knowledge of many disciplines within the scope of Technological Pedagogical Content Knowledge (TPACK), which is a current instructional technology model, determine the most appropriate pedagogical approach and mix all of them with appropriate instructional technologies (Beeson et al., 2014). In addition, the social studies teacher does not take courses including technical information about digital technologies as well as information technology and software teacher during the undergraduate education process, and the limited number of courses that are enrolled may also be inefficient (Erdoğan & Şerefli, 2021). Finally, it is noted that social studies teachers have significant inadequacies in using new technology-supported instructional methods compared to other branches (Dawson, Bull, & Swain, 2000; Shriner et al., 2010). These reasons can be defined as strong reasons for studying the relationship between a social studies teacher and instructional technology from a different point of view. Because it is thought that the use of technology in achieving the teaching goals of a multidisciplinary structure means a different level of load for a social studies teacher compared to other branches. This psychological load on technology is called technostress in the literature.

Although the concept of technostress was included in the literature in the 1980s, it is observed that research on technostress has increased especially in the last 20 years, and recently the focus has been on the technostress of educators (Çetin & Bülbül, 2017; Çoklar, Efilti, Şahin, & Akçay, 2016; Dong, Xu, Chai, & Zhai, 2020). The acceleration of technological development and the incorporation of information and communication technologies in teaching processes and the fact that problems become more visible as a result of this situation is considered as the reason for this. Accordingly, it can be seen that many studies have been conducted on the relationship between technostress and teachers. Some of these are; modeling study on the causes of technostress performed with secondary school teachers (Joo, Lim, & Kim, 2016), modeling on the causes of technostress conducted with high school teachers (Özgür, 2020), modeling of the academics' technostress (Wang & Li, 2019), a case study examining the reasons for teachers' technostress (Al-Fudail & Mellar, 2008; Çoklar et al., 2016); correlational research that examines the perceptions of academics about technostress and their acceptance of information and communication technologies (Akgün, 2019), correlational research on the technostress perceptions of school administrators and their innovation levels (Çetin & Bülbül, 2017) and a survey study examining the relationship of faculty members with technostress in the distance education process (Penado-Abilleira, Rodicio-García, Ríos-de Deus, & Mosquera-González, 2021). Although studies are carried out in different branches and within the scope of different variables in all these studies, a study that revealed the status of social studies teachers' technostress and the effects of variables that are predictors of this situation on technostress has not been found. This situation represents an important deficiency. Because due to the Covid-19 pandemic, stress situations caused by technology occur differently in each branch and the variables affecting the technostress should be evaluated on a branch-based basis. In order to fill this gap in the literature, the aim of this study is to determine the relationships between the technostress levels of social studies teachers and the variables of gender, competency of Technological Pedagogical Content Knowledge [TPACK], perception of school support, and job satisfaction. In accordance with this purpose, it is aimed to find answers to the following research questions.

1. What is the level of technostress, TPACK competencies, perceptions of school support, and job satisfaction of social studies teachers?
2. Are there any significant relationships between the technostress levels of social studies teachers and the variables of gender, TPACK competency, perception of school support, and job satisfaction?
3. Are the variables of gender, TPACK competency, perception of school support, and job satisfaction significant predictors of social studies teachers' technostress levels?
4. To what extent do the variables of gender, TPACK efficacy, school support perception, and job satisfaction explain the variability in social studies teachers' technostress levels?

Theoretical Background

In this part, the concept of technostress and the relationship between variables of gender, TPACK, school support, and job satisfaction and technostress will be examined.

Concept of Technostress

Technostress is an individual problem that arises due to the rapid development of information and communication technologies. The concept of technostress was first introduced to the literature by Clinical Psychologist Craig Brod in 1984. Brod (1984) called technostress a disease of the modern era that appears when individuals feel the inability to adapt to developing and changing technologies. This definition has been renewed in later years by Weil and Rosen (1997) with a broader perspective. The researchers have defined technostress as the negative effects that occur on the attitude, thinking, behavior, and psychology of individuals with personal characteristics. Technostress is a result of individuals' struggle with new cognitive and social requirements required by developing technologies (Tarafdar, Tu, Ragu-Nathan, & Ragu-Nathan, 2007). Nowadays, individuals are exposed to excessive information and experience loading both through technological tools and applications in their interactions with information and communication technologies, due to their constant availability, they are asked to demonstrate more work force and they are expected to perform multiple tasks and perform their responsible tasks faster in the digital environment (Ayyagari, Grover, & Purvis, 2011; La Torre, Esposito, Sciarra, & Chiappetta, 2019). As a result of this, with an increase in stress levels, individuals become unable to cope with what is required from them and are exposed to a negative effect which is called technostress (Tarafdar, Tu, & Ragu-Nathan, 2010). The concept of technostress was defined as the stress effect that information and communication technologies users feel on them when using technologies by Ragu-Nathan, Tarafdar, Ragu-Nathan, and Qiang (2008). Technostress is the psychological definition of the feeling of inability and inability to cope as a result of the intense relationships of individuals with technology (Wang, Tan, & Li, 2020). There are many factors that cause this situation. In the literature, the situations that reveal technostress (technostress creators) are grouped under five dimensions (Tarafdar et al., 2007, 2010; Tarafdar, Tu, Ragu-Nathan, & Ragu-Nathan, 2011).

1. Techno-Overload: It is the fact that information and communication technologies overload the individual with more tasks than they can cope with and cannot cope with these tasks.
2. Techno-Occupation: It is a situation where individuals stay in touch with their work constantly due to the 7/24 accessibility provided by technology during their free time outside of work hours.
3. Techno-Complexity: Constantly updated technological devices or software and applications lead individuals to consistently renew themselves. This situation is becoming increasingly complicated and creates stress in individuals.
4. Techno-Insecurity: It is a stressful situation caused by the fact that individuals at work feel competitive in adapting to new technologies and the understanding that the employer will also choose the person who is the most successful.
5. Techno-Uncertainty: Individuals acquire new knowledge in order to adapt to the updated technologies. However, due to the speed of development of technology, what has been learned may become obsolete before it is even started. The uncertainty that this situation creates for individuals is another source of technostress.

As a result of the technostress caused by increasing the effect of the mentioned factors, individuals are exposed to negative effects. Social life, professional life, and individual health are damaged due to technostress. These effects can be caused by psychological, social, and physical such as techno-burnout status, decreased satisfaction with the process of using technology (Tarafdar et al., 2010; Wang et al., 2020); disruption of technology usage continuity (Maier, Laumer, Weinert, & Weitzel, 2015); feeling of discomfort, anxiety and physical problems (Çoklar & Şahin, 2011; Salanova, Llorens, & Cifre, 2013); problems with the heart, blood pressure and muscles (Jena, 2015); elevation of the stress-sensitive hormone cortisol (Riedl et al., 2012), etc. By considering the impact of the above-mentioned factors on the professional life of teachers, it is thought that they will reveal significant inadequacies both from a professional and daily life point of view. In order to avoid this, it is necessary to determine the variables affecting the technostress. Below, the relationships between gender, TPACK, school support, and job satisfaction, which are called variables affecting technostress, and technostress are given within the scope of the literature.

Technostress and TPACK

TPACK is a technology integration model that expresses the need to combine technological knowledge (TK), pedagogical knowledge (PK), and content knowledge (CK) and reflect them in the instructional process introduced by Mishra and Koehler (2006). The model reveals how technology can be efficiently incorporated into the instructional process by determining the relationship and complexity of the components of technology, pedagogy, and content knowledge (Schmidt et al., 2009). In this aspect, there is an expectation from teachers to combine and use technology, pedagogy, and content knowledge. There are important grounds that in cases where the expectation is not met, it creates stress on the teacher, thereby directly affecting the technostress. For example, Al-Fudail and Mellar (2008) stated that the transition to the use of technology in the classroom without the necessary pedagogical preparations is an important reason that triggers technostress. Similarly, Gökbulut (2021) stated that the decrease in the technostress level of the teacher will ease the integration of technology into education. From this point of view, the development of teachers' TPACK competencies reduces their technostress levels. In other words, there is a negative and significant relationship between TPACK competency and technostress (Dong et al., 2020; Joo et al., 2016; Kay, 2008; Özgür, 2020). This situation necessitates the development of TPACK competencies in the pre-service and in-service periods to reduce the technostress levels of teachers.

Technostress and Job Satisfaction

Job satisfaction is a concept that expresses the relationship between the expectations of individuals from their job and the fulfillment of these expectations (Locke, 1976). Job satisfaction, which expresses a positive emotional state, arises as a result of an individual's assessment of his/her job (La Torre et al., 2019). The level of difference between professional expectations and satisfaction of expectations affects the feelings of individuals towards their job (positive or negative) and determines the level of job satisfaction (İnce & Şahin, 2016; Jena, 2015). Excessive workload, loss of privacy about private life, and role uncertainty problems create a technostress and as a result, job satisfaction decreases (Suh & Lee, 2017). It is seen that there is a negative relationship between technostress and job satisfaction. The lack of job satisfaction affects the professional point of view, reduces professional performance, and thus increases the technostress. The lack of job satisfaction increases the technostress levels of teachers (Ayyagari et al., 2011; Jena, 2015; Kumar et al., 2013; Ragu-Nathan et al., 2008). Therefore, teachers with high job satisfaction make themselves more open to development and change due to the positive emotional effects they receive from their job, strive to use technology within healthy limits, and reduce their level of technostress.

Technostress and School Support

School support is an important element of support for the teacher to cope with the problems he/she faces. Ensuring adequate school support contributes to the teacher's perspective on the use of technology and the adequacy of technology use (Drossel, Eickelmann, & Gerick, 2017). By providing school support for teachers to use instructional technologies effectively, an external impact is created by solving problems in the fields of infrastructure, technology, and pedagogy (Porter & Graham, 2016). From this point of view, it is thought that school support, which has a positive effect on the use of

technology, will reduce the level of technostress of teachers. Therefore, it can be said that there is a negative relationship between technostress and school support (Dong et al., 2020; Joo et al., 2016; Longman, 2013; Tarafdar et al., 2011; Zhao et al., 2021). The increase in school support contributes to the elimination of especially external obstacles that create stress for teachers in the use of technology, thereby reducing the level of technostress of teachers.

Technostress and Gender

Different gender types understand and use technology differently. When the literature related to the variables affecting technostress was examined, it was found that one of the variables affecting technostress was gender (Marchiori, Mainardes, & Rodrigues, 2019). However, no results have been found regarding which gender type affects technostress more. In this context, it is stated that males' technostress levels are significantly different from females in some studies (Akgün, 2019; Ragu-Nathan et al., 2008; Shu, Tu, & Wang, 2011). From another point of view, it is stated that females have a higher level of technostress than males (Çoklar & Şahin, 2011; Lee, Chang, Lin, & Cheng, 2014; Riedl, 2013). Although the direction of the technostress cannot be determined in terms of the gender variable, one of the decisions that can be made from all these studies is that there is a remarkable relationship between technostress and gender.

Method

The Research Model

In this study, a quantitative research approach was used. The correlational survey pattern was preferred as a research pattern. In correlational survey models, it is aimed to examine the relationships between various characteristics related to the sample group (Fraenkel, Wallen, & Hyun, 2012). In this study, it is aimed to reveal multiple relationships between technostress level and variables of gender, TPACK competency, perception of school support, and job satisfaction. The dependent variable of the study is the technostress levels of social studies teachers. Variables of gender, TPACK competency, school support perception, and job satisfaction are included as independent variables.

Participants

In the study, participants were determined by convenience sampling. The convenience sampling method is a sampling method used in cases where random sample selection is unfavorable (Fraenkel et al., 2012). Since the data collection process of this study coincided with a period of intense Covid-19 pandemic, the sample was determined by convenience sampling. Because during this process, some teachers refused to participate in the study due to their concern that the virus might infect them, this prevented the researchers from determining a random sample, and the data were collected from eligible teachers. In addition, since this study is branch-based, the Covid-19 pandemic seriously affected the process of reaching social studies teachers. This limitation is accepted by researchers. In the study, 287 social studies teachers were reached. However, 17 of these teachers did not want to be involved in the research process due to the Covid-19 pandemic. Therefore, 270 social studies teachers who work in Ankara and Kırıkkale cities were included in the study. Out of the teachers included, 137 (50.7%) were male and 133 (49.3%) were female. 42.2% of the teachers were between the ages of 22-27 (n=114), 18.5% were between 28-33 (n=50), 10.7% were between 34-39 (n=29), 10.4% were between 40-45 (n=28), and 18.1% were 46 or older (n=49).

Data Collection Tools

Five different data collection tools were used in the study. Usage permissions were obtained from the developers for each data collection tool. The people who developed the data collection tool were contacted via e-mail, the purpose of the research was mentioned and permission to use was requested. Thus, the procedure related to the permissions for the use of measuring instruments was carried out. Detailed information about the data collection tools is presented below.

Personal Information Form

The personal information form included in the first part of the data collection tools was developed by the researchers. The genders and ages of social studies teachers were determined through the personal information form.

Technostress Scale

In order to determine the technostress levels of social studies teachers, the "Teachers' Techno-stress Levels Defining Scale" developed by Çoklar, Efilti, and Şahin (2017) was used. The scale consists of 28 items and five factors. The factors included in the scale are listed as "Learning-Teaching Process-Oriented", "Profession-Oriented", "Technical Issues-Oriented", "Personal-Oriented" and "Social-Oriented". The example items of the scale are as follows; "I feel pressure on myself to become more and more dependent on the internet in the educational process.", "I am worried about the change in the understanding of education and training due to technological tools." and "I would be concerned about ensuring the safety of technological tools at school (storage, preservation, etc.)". In the data collection tool, all items consist of positive statements, there are no items to be coded inversely, and the scale is rated in Likert type (1=I don't agree at all, 5=I completely agree). According to the DFA analysis carried out by the researchers, the structure that the scale is trying to measure has been verified (x2/sd=3.967, RMSEA=.073, NFI=.890, TLI=.900, CFI=.930). Within the scope of this research, DFA was conducted to test the structural validity of the Teachers' Techno-stress Levels Defining Scale. According to the results of the DFA, it was confirmed that the scale consists of five factors (x2/sd=1.512, RMSEA=.044, CFI=.941, GFI=.876, AGFI=.852, RMR=.030, PNFI=.761). The Cronbach's Alpha internal reliability coefficient of the scale was calculated as .92 in the entire scale and calculated between the range of .71 and .79 in factors by developers. In this study, the internal reliability coefficient was found as .93 in the entire scale and found as between the range of .72 and .87 in factors. The scores obtained from the scale are considered as average total scores in the five-point Likert type. In this study, factor-based calculations were performed. The fact that the scores obtained from the technostress scale are high is an indication that the technostress level is advanced. In the evaluation of scale scores, the scores between 1.00 and 2.33 were stated as low level, the scores between 2.34 and 3.67 were stated as medium level and the scores between 3.68 and 5.00 were stated as advanced technostress by the researchers.

TPACK Scale

Another data collection tool used in the research, the Technological Pedagogical Content Knowledge Scale (TPACK-deep)", was developed by Kabakçı-Yurdakul et al. (2012). The scale consists of 33 items and four factors. These factors have been defined as "Design", "Exertion", "Ethics" and "Proficiency". These factors aim the following: the design factor is the teacher's ability to design a process by blending instructional technology and pedagogy in the transfer of content to the student, the exertion factor is the teacher's ability to make the teaching process and the measurement and evaluation process effective by supporting it with technology, the ethics factor is the teacher's ability to adhere to ethical principles when using technology, and the proficiency factor is the teacher's ability to create effective solutions to problems that arise in the process and by blending teaching technology, pedagogy, and content knowledge. Examples from the scale are as follows; "I can use technology to appropriately design materials to the needs for an effective teaching and learning process", "I can be an appropriate model for the students in following codes of ethics for the use of technology in my teaching" and "I can use technology for implementing educational activities such as homework, projects, etc.". The scale is a five-point Likert type (1=I definitely can't do it, 5=I can easily do it). The structure of the scale was confirmed in accordance with the DFA analysis carried out by the researchers (x2/sd=3.981, RMSEA=.078, CFI=.950, GFI=.940, AGFI=.890, SRMR=.048, NFI=.910, NNFI=.940). In this study, DFA was performed to test the four-factor structure of the scale. According to the results of the DFA, the factor structure of the scale was also confirmed within the scope of our research (x2/sd=1.403, RMSEA=.039, CFI=.937, GFI=.869, AGFI=.850, RMR=.015, PNFI=.753). Cronbach's Alpha internal reliability coefficient for the Technological Pedagogical Content Knowledge Scale (TPACK-deep) was found as .95 by the developers. The internal reliability coefficient is calculated between .85 and .92 for factors. In this study, .93 is calculated for the entire scale and calculated between .87 and .75 for factors. The scores obtained from the scale can be calculated as total points and average scores can also be obtained according to the five-point Likert type. The lowest score of 33 and the highest score of 165 can be obtained from the TPACK-deep scale. Getting high scores from the scale indicates that the teacher's TPACK proficiency is high. No classification has been found on how the scores will be evaluated in the scale.

Job Satisfaction Scale

The "Minnesota Job Satisfaction Scale-Short Form (MJSS-SF)" developed by Weiss, Dawis, England, and Lofquist (1967) and adapted into Turkish by İnce and Şahin (2016) was used to determine the job satisfaction of social studies teachers. MJSS-SF contains 20 items and consists of two factors. The factors of the scale were determined as "Internal satisfaction" and "External satisfaction". Examples from the scale are as follows; "From the chance to become a "respectable " person in society...", "From the way of education policies are put into practice..." and "From the wage and workload I receive...". The scale has a five-point Likert type (1=Not satisfied at all, 5=Very satisfied). According to the results of the DFA analysis carried out by the researchers, the structural validity of the scale was confirmed (x2/sd=4.6, RMSEA=0.08, CFI=0.92, NFI=0.90, GFI=0.87). In this study, DFA was performed to test the structural validity of the scale. According to the results of the DFA, the two-factor structure of the scale was confirmed (x2/sd = 2.074, RMSEA =.063, CFI =.923, GFI =.883, AGFI =.855, RMR =.023, PNFI =.767). The Cronbach's Alpha internal reliability coefficient of MJSS-SF is determined as .86 for overall satisfaction and as .82 for internal satisfaction and as .78 for external satisfaction by developers. In this study, the internal reliability coefficient is calculated as .92 for the entire scale, as .89 for the internal satisfaction factor, and as .85 for the external satisfaction factor. Total points can be obtained from the MJSS-SF scale and five-point Likert-type calculations can be performed. The lowest score that can be obtained from the scale is 20 and the highest score is 100. The fact that the participant scored 75 and above from the MJSS-SF scale means high satisfaction, getting a score between 26 and 74 means medium satisfaction, and getting a score of 25 and below means a low level of satisfaction. According to the arithmetic averages of the scores obtained from the five-point Likert-type scale, an individual score of 3.75 and above is considered to be high satisfaction, getting a score between 1.26-3.74 is considered to be medium satisfaction, and getting a score of 1.25 and below is considered to be low satisfaction.

School Support Scale

In the study, the "Teacher Technology Scale" developed by Lowther and Ross (2000) was used to determine the support that social studies teachers receive from their institutions. The main purpose of the scale is to determine the perceptions of teachers towards technology and computers. The Teacher Technology Scale consists of two basic parts. In the first part, teachers' perspectives on technology are determined within the scope of four factors while in the second part, demographic data are collected. In this study, "Total Support" and "Technical Support" factors from the first part of the scale were considered to determine the perception of school support. While the total support factor of the scale aims to measure the support given to the teacher from the school administration, colleagues, and parents to ensure technology integration, the technical support factor aims to measure the technical support for the technology that the teacher receives from his/her school. The data collection tool consists of 8 items. Examples of the scale are as follows, "Parents and community members support our school's emphasis on technology", "Teachers receive adequate administrative support to integrate technology into classroom practices" and "Our school has a well-developed technology plan that guides all technology integration efforts". The data collection tool is a five-point Likert type (1=Strongly disagree, 5= Strongly agree). Confirmatory factor analysis for the two factors of the Teacher Technology Scale was carried out by Özgür (2020) and Cronbach's Alpha internal reliability coefficient was calculated between the range of .84 and .85. According to the results of the DFA analysis carried out by the researchers, the structure of the scale was confirmed (x2/sd=1.948, RMSEA=.052, CFI=.990, GFI=.979, AGFI=.953, SRMR=.027, NFI=.980). In this study, the internal reliability coefficient was calculated as .92 for the entire scale, and the internal reliability values of the factors were found as .86 and .89. The two-factor structural feature of the scale was also confirmed in the DFA analysis carried out in the research process (x2/sd=2.529, RMSEA=.075, CFI=.979, GFI=.957, AGFI=.918, RMR=.032, PNFI=.656). The scale is scored in a five-point Likert type and the highest score of 40 points and the lowest score of 8 points can be obtained from the scale. As the score obtained from the scale increases, the teacher's perception of school support strengthens. There is no criterion for how to evaluate the scores in the measurement tool.

Data Collection

Before starting the data collection process of the study, the necessary permissions were obtained from the social sciences ethics committee of the university to which one of the researchers is affiliated and the data collection process was initiated. Due to the Covid-19 pandemic, before going collect data, the school administration was contacted and social studies teachers at the school were asked about their volunteerism for participating in the study, and eligible teachers were included in the process. The information on which day the teachers who indicated that they could participate in the study was obtained from the school administration. Then, the data collection tools were put in an envelope and left to the school administrators to be transmitted to the social studies teachers and thus personal contact was tried to be reduced. This process has been preferred due to the protection of individual health, rather than being a threat to internal validity. In addition, the confidentiality of the answers given by social studies teachers to the data collection tools was also ensured by choosing a closed envelope. The data collection tools answered by the social studies teachers were put in envelopes and completely handed over from the school administration. Then, the responses to the data collection tools were reviewed in detail. As a result of this review, no missing data was found. In the first part of the data collection form, an instruction was presented to the participants regarding the purpose of the research and how and in how long the data collection tools should be answered. In this instruction, the purpose of the research was mentioned, an explanation was given for each data collection tool, participants were asked to answer the data collection tools according to a five-point Likert-type scoring, all items are requested to be answered completely according to the order specified by the researchers and it was communicated to the participants that all the data collection tools should be answered within 40 minutes.

Analysis of Data

In the analysis of the research data, the SPSS 22 package program was used. Firstly, it was examined whether there were missing data in the study. After that, the Mahalanobis distance was used to detect outliers. Then, the normality of distribution of the data sets was examined by Kolmogorov-Smirnov analysis and kurtosis-skewness values. As a result of the Kolmogorov-Smirnov analysis, it was found that the normality test result of all data sets except technostress was above the .05 significance value. Kurtosis and skewness values and graphs were examined for the technostress data set and all other data sets. Since kurtosis and skewness values are between +1.5 and -1.5, a normal distribution condition is met for all data sets (Tabachnick & Fidell, 2013). Then, confirmatory factor analyses were performed for all data sets. As a result of the analysis, it was concluded that all data sets reliably measure the desired structure. In addition, the Pearson correlation coefficient values were firstly examined to test whether there were multiple connection problems between the independent variables. Then, VIF and tolerance values were also reviewed. As a result, it was found that there were no multi-connection problems because it was reached that the tolerance values of the predictor variables were higher than .10 and the VIF values were less than .10 (Cohen, Cohen, West, & Aiken, 2003). In addition, the linearity assumption is also met in the data set. Thus, the necessary conditions were created for hierarchical multiple regression analysis. Hierarchical multiple regression analysis was carried out in four stages. Gender in the first stage, sub-dimensions of TPACK competency in the second stage, sub-dimensions of perception of school support in the third stage, and sub-dimensions of job satisfaction in the fourth stage were included in the analysis process. The reason why this ranking is preferred is that it is preferred for a ranking from subjective qualities to external factors and a wide period. In this study, gender and TPACK competency variables are considered to be more exclusive, the perception of school support is considered in a structure that can change with an external effect, and job satisfaction is considered in a structure that can be defined over a longer period. In the first part of the findings, descriptive statistics and correlation analysis results are presented. In the second part, hierarchical multiple regression analysis results for the technostress dependent variable are explained.

Results

In the findings section of the study, descriptive data will be covered first and then correlation analysis and hierarchical multiple regression analysis results will be presented.

Table 1. Descriptive Data

Data Collection Tool	Dimension	N	S	$\bar{X}$	Min.	Max.	Skewness	Kurtosis
Technostress Scale	All	270	.474	1.703	1.04	2.89	.587	-.785
	LTPO	270	.500	1.714	1.00	3.14	.509	-.736
	JO	270	.433	1.531	1.00	3.17	.921	.400
	TSO	270	.689	1.866	1.00	3.50	.693	-.629
	PO	270	.555	1.601	1.00	3.20	.958	.023
	SO	270	.678	1.824	1.00	3.75	.683	-.443
TPACK Scale	All	270	.307	4.499	3.58	4.97	-.389	-.925
	Design	270	.401	4.429	3.30	5.00	-.524	-.672
	Exertion	270	.306	4.538	3.67	5.00	-.418	-.825
	Ethics	270	.362	4.641	3.00	5.00	-1.291	1.483
	Proficiency	270	.418	4.378	3.20	5.00	-.203	-.729
School Support Scale	All	270	.834	3.969	1.50	5.00	-.811	-.264
	General Support	270	.830	3.991	1.50	5.00	-.870	.235
	Technical Support	270	.951	3.948	1.25	5.00	-.884	-.280
Job Satisfaction Scale	All	270	.421	4.454	3.10	5.00	-.697	-.482
	Internal Satisfaction	270	.425	4.592	3.08	5.00	-1.117	.534
	External Satisfaction	270	.499	4.247	3.13	5.00	-.332	-.985

TPACK: Technopedagogic Content Knowledge, LTPO: Learning-Teaching Process-Oriented, JO: Job-Oriented, TSO: Technical Subject-Oriented, PO: Personal-Oriented, SO: Social-Oriented

When the average scores of the social studies teachers regarding their technostress levels are examined in Table 1, it is seen that the highest technostress is realized in "Technical Subject-Oriented" ($\bar{X}$=1.866) and followed by "Social-Oriented" ($\bar{X}$=1.824), "Learning-Teaching Process-Oriented" ($\bar{X}$=1.714) and "Personal-Oriented" ($\bar{X}$=1.601) and "Job-Oriented" ($\bar{X}$=1.531) respectively. In short, the technostress of social studies teachers in all dimensions of the technostress scale is at a low level. When the TPACK score averages of the teachers are examined, it is seen that the highest average score belongs to the "Ethics" dimension ($\bar{X}$=4.641). This dimension is followed by "Exertion" ($\bar{X}$=4.538), "Design" ($\bar{X}$=4.429), and "Proficiency" ($\bar{X}$=4.378) respectively. This finding indicates that the participants have a high level of TPACK competencies. In school support scores, it was found that the average score of the "General Support"($\bar{X}$=3.991) dimension was higher than the "Technical Support" ($\bar{X}$=3.948) dimension. Thus, it can be said that the perceptions of social studies teachers about school support are positive at the Likert level. The average scores of "Internal Satisfaction" ($\bar{X}$=4.592) of social studies teachers in terms of job satisfaction scores are higher than the "External Satisfaction" ($\bar{X}$=4.247) dimension. This finding shows that social studies teachers have a high level of satisfaction in terms of both internal satisfaction and external satisfaction. The kurtosis and skewness values of the data collection tools are also included in Table 1. Kurtosis and skewness values of data collection tools are within the limits specified in the literature (-1.5 to +1.5) (Tabachnick & Fidell, 2013).

Table 2. The Results of the Correlation Analysis between Technostress and Variables of TPACK, Job Satisfaction, School Support, and Gender

		Technostress				
		LTPO	JO	TSO	PO	SO
Gender		.322**	.227**	.192**	.183**	.232**
TPACK	Design	-.312**	-.330**	-.162**	-.322**	-.257**
	Exertion	-.218**	-.214**	-.085	-.212**	-.143*
	Ethics	-.128*	-.196**	-.090	-.150*	-.133*
	Proficiency	-.277**	-.235**	-.130*	-.300**	-.230**
Job Satisfaction	Internal Satisfaction	-.436**	-.293**	-.434**	-.443**	-.444**
	External Satisfaction	-.559**	-.262**	-.517**	-.446**	-.576**
School Support	General Support	-.357**	-.124*	-.435**	-.324**	-.408**
	Technical Support	-.384**	-.140*	-.511**	-.373**	-.469**
Technostress Scale	LTPO	1	.508**	.723**	.594**	.787**
	JO		1	.502**	.562**	.514**
	TSO			1	.620**	.790**
	PO				1	.704**
	Design					1

**p< .01, *p< .05, Gender: 1-Male, 2-Female

When the findings in Table 2 are examined, it is seen that technostress and its sub-dimensions have a predominantly negative and medium level relationship with all independent variables at most. The sub-dimensions of the technostress dependent variable have significant relationships with the sub-dimensions of all independent variables. The highest relationship is between the "Social-Oriented" technostress and the "External Satisfaction" dimension (r= -0.576, *p*< .01). This is followed by the relationship between the "Learning-Teaching Process-Oriented" technostress and the "External Satisfaction" dimension (r= -0.559, *p*< .01). When "Job-Oriented" technostress is evaluated, it is seen that the highest negative relationship is between the "Design" dimension of the TPACK variable and technostress (r=-0.330, *p*< .01). The "Technical Subject-Oriented" technostress dimension is related to the "External Satisfaction" dimension at the most (r=-0.517, *p*< .01). The same finding applies in terms of the "Personal-Oriented" technostress dimension (r=-0.446, *p*< .01). When all the results for the relations are reviewed, it is especially noticeable that the "External Satisfaction" dimension has negative, medium-level relations with technostress and its sub-dimensions. When the relationships between the sub-dimensions of technostress are examined, it is determined that there are significant and medium-high-level relationships between all dimensions.

Prediction of Technostress

In this part of the findings, hierarchical multiple regression analysis results are presented for prediction of "Learning-Teaching Process-Oriented", "Job-Oriented", "Technical Subject-Oriented", "Personal-Oriented" and "Social-Oriented" technostress which are the sub-dimensions of the Technostress Scale.

Table 3. Hierarchical Multiple Regression Analysis Results for the Prediction of the Learning-Teaching Process-Oriented Technostress Dimension

Predictive Variables	R	R^2	ΔR^2	Std. Error	F Change	β	t	p
Model 1								
Gender	.322[a]	.104	.104	.474	31.064	.322	5.573	.000
Model 2								
Design						-.316	-3.397	
Ethics	-.451[b]	.204	.100	.450	8.284	.007	.098	.000
Proficiency						-.058	-.718	
Exertion						.055	.645	

Table 3. Continued

Predictive Variables	R	R^2	ΔR^2	Std. Error	F Change	β	t	p
Model 3								
General Support	-.547[c]	.299	.095	.424	17.766	-.168	-2.135	.000
Technical Support						-.178	-2.230	
Model 4								
Internal Satisfaction	-.668[d]	.446	.147	.379	34.462	-.102	-1.377	.000
External Satisfaction						-.386	-5.251	

a. Predictors: (Constant), Gender
b. Predictors: (Constant), Gender, Design, Ethics, Proficiency, Exertion
c. Predictors: (Constant), Gender, Design, Ethics, Proficiency, Exertion, General Support, Technical Support
d. Predictors: (Constant), Gender, Design, Ethics, Proficiency, Exertion, General Support, Technical Support, External Satisfaction, Internal Satisfaction

According to Table 3, regression coefficient values were found to be significant in all four models explaining the variance related to the "Learning-Teaching Process-Oriented" technostress. When Model 1 was examined, it was found that gender (demographic feature) was a significant predictor of the "Learning-Teaching Process-Oriented" technostress. The gender variable explains 10% of the variance. In Model 2, the TPACK sub-dimensions were included in the model and a significant and negative predictor was revealed (ΔR^2=.100, p<.000). When the gender variable was reviewed, it was found that the sub-dimensions of TPACK explained 10% of the variance related to the "Learning-Teaching Process-Oriented" technostress. When Model 2 was examined, it is seen that 20% of the total variance is explained. In Model 3, "General Support" and "Technical Support", which are sub-dimensions of the school support variable, were included in the analysis process and 30% of the total variance was explained. Thus, it was determined that the sub-dimensions of "General Support" and "Technical Support" are negative and significant predictors of the "Learning-Teaching Process-Oriented" technostress (ΔR^2=.095, p<.000). Only "General Support" and "Technical Support" variables explain 9% of the variance. In Model 4 which is the final stage of the analysis, "Internal Satisfaction" and "External Satisfaction", which are the sub-dimensions of job satisfaction, were included in the model and it was found that they are significant predictors for the "Learning-Teaching Process-Oriented" technostress in a negative way (ΔR^2=.147, p<.000). While only the "Internal Satisfaction" and "External Satisfaction" variables explained 15% of the variance, it was found that 45% of the total variance was explained in Model 4.

Table 4. Hierarchical Multiple Regression Analysis Results for the Prediction of the Job-Oriented Technostress Dimension

Predictive Variables	R	R^2	ΔR^2	Std. Error	F Change	β	t	p
Model 1								
Gender	.227[a]	.051	.051	.422	14.550	.227	3.814	.000
Model 2								
Design						-.385	-4.058	
Ethics	-.410[b]	.168	.117	.398	9.280	-.084	-1.234	.000
Proficiency						.041	.496	
Exertion						.095	1.088	
Model 3								
General Support	-.412[c]	.170	.001	.399	.226	-.039	-.456	.000
Technical Support						.000	-.003	
Model 4								
Internal Satisfaction	-.467[d]	.218	.048	.389	7.964	-.200	-2.280	.000
External Satisfaction						-.084	-.962	

a. Predictors: (Constant), Gender
b. Predictors: (Constant), Gender, Design, Ethics, Proficiency, Exertion
c. Predictors: (Constant), Gender, Design, Ethics, Proficiency, Exertion, General Support, Technical Support
d. Predictors: (Constant), Gender, Design, Ethics, Proficiency, Exertion, General Support, Technical Support, External Satisfaction, Internal Satisfaction

When Table 4 is evaluated, it is seen that the regression coefficients explaining the "Job-Oriented" technostress are significant in all models. Firstly, in Model 1, it was found that the gender variable is a significant predictor of the "Job-Oriented" technostress, and 5% of the variance was explained (R^2=.051, p<.000). Within Model 2, "Design", "Ethics", "Proficiency" and "Exertion", which are sub-dimensions of TPACK, were included in the analysis process and 17% of the total variance was explained (R^2=.168, p<.000). The sub-dimensions of TPACK predicted the "Job-Oriented" technostress in a meaningful and negative way. Only the TPACK sub-dimensions explain 12% of the variance (ΔR^2=.117, p<.000). In Model 3, 17% of the variance of the "Job-Oriented" technostress is explained by adding "General Support" and "Technical Support" to the process, which are the sub-dimensions of school Support (R^2=.170, p<.000). The variables "General Support" and "Technical Support" with a negative and significant predictor did not have a significant effect on the explanation of variance (ΔR^2=.001, p<.000). In Model 4, "Internal Satisfaction" and "External Satisfaction", which are the sub-dimensions of job satisfaction, were included in the model and it was found that there are negative significant predictors of technostress for the Job-Oriented (ΔR^2=.048, p<.000). While only the variables "Internal Satisfaction" and "External Satisfaction" explained 5% of the variance, it was determined that 22% of the total variance was explained in Model 4.

Table 5. Hierarchical Multiple Regression Analysis Results for the Prediction of Technical Subject-Oriented Technostress

Predictive Variables	R	R^2	ΔR^2	Std. Error	F Change	β	t	p
Model 1								
Gender	.192[a]	.037	.037	.677	10.249	.192	3.201	.002
Model 2								
Design						-.208	-2.073	
Ethics	-.261[b]	.068	.031	.671	2.202	-.049	-.682	.002
Proficiency						-.003	-.035	
Exertion						.101	1.091	
Model 3								
General Support	-.540[c]	.292	.224	.587	41.425	-.129	-1.633	.000
Technical Support						-.395	-4.906	
Model 4								
Internal Satisfaction	-.622[d]	.387	.095	.549	20.203	-.123	-1.588	.000
External Satisfaction						-.277	-3.584	

a. Predictors: (Constant), Gender
b. Predictors: (Constant), Gender, Design, Ethics, Proficiency, Exertion
c. Predictors: (Constant), Gender, Design, Ethics, Proficiency, Exertion, General Support, Technical Support
d. Predictors: (Constant), Gender, Design, Ethics, Proficiency, Exertion, General Support, Technical Support, External Satisfaction, Internal Satisfaction

Table 5 presents the findings related to the prediction of "Technical Subject-Oriented" technostress by independent variables. When the related table was examined, it was found that the gender variable was a significant predictor of the dependent variable at the Model 1 stage and explained 4% of the variance (R^2=.037, p<.002). In the Model 2 stage, "Design", "Ethics", "Proficiency" and "Exertion" which are sub-dimensions of TPACK were included in the process, 7% of the variance was explained and 3% change in the variance occurred ($\Delta R2$=.031, p<.002). In this aspect, the TPACK sub-dimensions are a negative predictor of the "Technical Subject-Oriented" technostress from a holistic point of view. In Model 3, "General Support" and "Technical Support", which are sub-dimensions of

the independent variable of the school support were included in the process. As a result of this, the dependent variable was predicted negatively and significantly, 29% of the variance was explained, and a change in the variance at the level of 22% occurred (ΔR^2=.224, p<.000). Finally, in Model 4, it was found that the dependent variable was predicted in a negative way significantly under the influence of the variables "Internal Satisfaction" and "External Satisfaction", and 39% of the total variance was explained. In addition, the independent variables added at the Model 4 stage created a 10% change in the explanation of variance.

Table 6. Hierarchical Multiple Regression Analysis Results for the Prediction of Personal-Oriented Technostress

Predictive Variables	R	R^2	ΔR^2	Std. Error	F Change	β	t	p
Model 1								
Gender	.183[a]	.034	.034	.547	9.312	.183	3.052	.003
Model 2								
Design						-.301	-3.128	
Ethics	-.383[b]	.147	.113	.517	8.772	-.002	-.025	.000
Proficiency						-.127	-1.526	
Exertion						.093	1.057	
Model 3								
General Support	-.483[c]	.233	.086	.492	14.728	-.106	-1.290	.000
Technical Support						-.222	-2.648	
Model 4								
Internal Satisfaction	-.574[d]	.329	.096	.462	18.587	-.294	-3.610	.000
External Satisfaction						-.106	-1.317	

a. Predictors: (Constant), Gender
b. Predictors: (Constant), Gender, Design, Ethics, Proficiency, Exertion
c. Predictors: (Constant), Gender, Design, Ethics, Proficiency, Exertion, General Support, Technical Support
d. Predictors: (Constant), Gender, Design, Ethics, Proficiency, Exertion, General Support, Technical Support, External Satisfaction, Internal Satisfaction

When Table 6 was examined, it was found that the "Personal-Oriented" technostress was significantly predicted by the effect of the gender variable within the scope of Model 1, and the total variance was explained at the level of 3% (R^2=.034, p<.003). In Model 2, "Design", "Ethics", "Proficiency" and "Exertion", which are the sub-dimensions of TPACK, were added to the analysis. After this, the independent variable was predicted in a negative significant way, 15% of the total variance was explained, and 11% change occurred in the explanation of the variance (ΔR^2=.113, p<.000). In Model 3, "General Support" and "Technical Support", which are the sub-dimensions of the school support variable, were added to the analysis. When the model was examined after this process, it was found that the independent variables predicted the dependent variable in a negative way significantly, that 23% of the total variance was explained, and that there was a 9% change in variance (ΔR^2=.086, p<.000). In the final stage, Model 4, "Internal Satisfaction" and "External Satisfaction", which are the sub-dimensions of the job satisfaction variable, were added to the analysis. Thus, the dependent variable was predicted negatively and significantly, 33% of the total variance was explained, and a 10% change in variance occurred (ΔR2=.096, p<.000).

Table 7. Hierarchical Multiple Regression Analysis Results for the Prediction of the Social-Oriented Technostress

Predictive Variables	R	R^2	ΔR^2	Std. Error	F Change	β	t	p
Model 1								
Gender	.232[a]	.054	.054	.661	15.178	.232	3.896	.000
Model 2								
Design						-.291	-3.001	
Ethics	-.360[b]	.130	.076	.638	5.787	-.046	-.660	.000
Proficiency						-.069	-.817	
Exertion						.144	1.614	
Model 3								
General Support	-.538[c]	.290	.160	.579	29.495	-.137	-1.726	.000
Technical Support						-.309	-3.836	
Model 4								
Internal Satisfaction	-.654[d]	.427	.137	.522	31.198	-.059	-.785	.000
External Satisfaction						-.403	-5.395	

a. Predictors: (Constant), Gender
b. Predictors: (Constant), Gender, Design, Ethics, Proficiency, Exertion
c. Predictors: (Constant), Gender, Design, Ethics, Proficiency, Exertion, General Support, Technical Support
d. Predictors: (Constant), Gender, Design, Ethics, Proficiency, Exertion, General Support, Technical Support, External Satisfaction, Internal Satisfaction

In Table 7, the results of hierarchical multiple regression analysis regarding the "Social-Oriented" technostress are presented. When Table 7 was examined, it was found that the gender variable significantly predicted the dependent variable at the Model 1 stage and explained the variance at the level of 5% (R2=.054, p<.000). In Model 2, "Design", "Ethics", "Proficiency" and "Exertion" were added to the analysis process, which are the sub-dimensions of TPACK, the variance was explained at the 13% level and there was an 8% change in the explanation of the variance (ΔR2=.076, p<.000). In the Model 3 stage, "General Support" and "Technical Support", which are sub-dimensions of the school support variable, are included in the process. As a result of this process, the variance was explained at the level of 29% and there was a 16% change in the explanation of the variance (ΔR2=.160, p<.000). In the final stage, Model 4, "Internal Satisfaction" and "External Satisfaction", which are the sub-dimensions of job satisfaction, were added to the analysis. Thus, the variance was explained at the level of 43% and a 14% change in the explanation of the variance occurred (ΔR2=.137, p<.000).

Discussion, Conclusion and Suggestions

In this study, an analysis was performed to determine the variables that predict the technostress levels of social studies teachers. In the analysis process, the technostress levels of social studies teachers were considered as dependent variables while gender, TPACK, school support, and job satisfaction variables were considered as independent variables. In order to test the designed prediction model, firstly descriptive statistics were presented and Pearson Correlation analysis was performed, and then hierarchical multiple regression analysis was employed. When the descriptive statistics of the research were examined, it was found that the technostress levels of social studies teachers were low, and their TPACK competencies, perceptions of school support, and job satisfaction were high. As a result of hierarchical multiple regression analysis, it was concluded that gender, TPACK, school support, and job satisfaction variables significantly predict the technostress levels of social studies teachers. In addition, a significant negative relationship was found between TPACK, school support, and job satisfaction variables and the technostress variable. In this part, the findings of the research will be discussed within the scope of the literature, implications will be made, and limitations will be mentioned.

Gender, which is a demographic variable, has a significant effect on all dimensions of the technostress of social studies teachers. Within the scope of the research, it was concluded that there are significant relationships between gender and technostress and that gender is a significant predictor by explaining the change in technostress in the range of 3% and 10%. There are many studies supporting this (Akgün, 2019; La Torre et al., 2019; Lee et al., 2014; Ragu-Nathan et al., 2008; Syvänen, Mäkiniemi, Syrjä, Heikkilä-Tammi, & Viteli, 2016). In this research, the technostress levels of male social studies teachers were found to be significantly lower than female teachers. In other words, male social studies teachers feel less psychological load caused by technology compared to female teachers. The reason for this result may be different approaches of different gender types in their perspectives on technology and technology usage habits. Despite the conclusion reached in this study, no conclusion has been found in the literature regarding which gender type has less technostress. This result is explained in the literature for different reasons. One of these reasons is that males spend less time with technological devices than females and use this time for career goals, while females spend more time and use it for social reasons (Pawlowska & Potembska, 2012; Pew Research Center, 2010). This can be interpreted that females' increased commitment to technological devices out of professional use increases their technostress. In addition, it was found that especially technical problems increase females' technostress levels (Çoklar et al., 2016). In the research conducted by Crocco et al. (2008), they stated that female social studies teachers are included in the male-dominated technology culture and have problems, but this distinction has disappeared with the development of web-based technologies. Contrary to all these studies, some studies show that males have more technostress than females (Riedl, 2013; Shepherd, 2004). A study supporting this result was conducted by Jena and Mahanti (2014), and the researchers noted that female academicians use technological devices only when necessary, and therefore have a lower level of technostress.

The results of the research show that TPACK is an important variable that significantly predicts the technostress levels of social studies teachers. In the process of analysis, the addition of sub-dimensions of TPACK to the hierarchical multiple regression model creates a significant change in the range of 3% to 12% in explaining the variance. The direction of this change is negative. In other words, the increase in the TPACK competency of social studies teachers leads to a decrease in their technostress levels. Despite all this effect, it is also another conclusion reached that TPACK, especially the exertion dimension, is more ineffective for the prediction of technostress compared to other dimensions. In the exertion dimension, the teacher's ability to effectively maintain the teaching and measurement and evaluation process by supporting it with technology is measured. The reason why the relationship of this dimension with the technostress level is weak may be that the technostress arises in the process of gaining knowledge of instructional technology in a stronger way rather than in the implementation process. In short, since the implementation process is a result, it can be expected to affect the level of technostress less. By considering the studies examining the relationship between technostress and TPACK, the result of negative and significant predictive is strongly supported by many studies (Al-Fudail & Mellar, 2008; Dong et al., 2020; Gökbulut, 2021; Joo et al., 2016; Kay, 2008). The reason for this result may be the competence of teachers in how to effectively combine technology, pedagogy, and content knowledge in incorporating technology into their courses (Özgür, 2020). If this process is being carried out unsuccessfully, the inability to cope with technology may arise in the form of stress caused by the use of technology. In addition, it can be considered as a reason why the teaching technology competencies of social studies teachers could not reach the desired level during the undergraduate process (Erdoğan & Şerefli, 2021). The teacher's competence in information and communication technology, his/her ability to harmonize the use of information and communication technologies with his/her teaching style, and his/her attitude to information technologies may also be the reasons for the conclusion reached in this study (Syvänen et al., 2016). Although TPACK knowledge is available, it is found that it is possible to have negative effects on the social studies teachers due to lack of practice by Beeson et al. (2014). In short, the increase in the competence of individuals in the TPACK model enriches the technology-supported teaching process and reduces the level of technostress.

School support has a significant impact on reducing the technostress levels of social studies teachers. Because when the school support variable dimensions are included in the hierarchical multiple regression model, there is a significant change in the explanation of variance. This change occurred in the range of 0.1% to 22%. Within the scope of the school support variable, general and technical support from the school was taken into account. In other words, the support that the teacher receives from both the school's administration and colleagues, both parents and expert who is responsible for technical tasks, if available, to ensure the integration of technology into their courses is within the scope of the school support variable. When the literature is examined, the conclusion that school support is effective in reducing technostress is strongly supported (Dong et al., 2020; Drossel et al., 2017; Longman, 2013; Porter & Graham, 2016; Tarafdar et al., 2011). The reason for this situation is prominently revealed by Joo et al. (2016). The researchers stated that the technostress levels decrease thanks to the technical assistance that the teacher received from the school (in including teaching technology in his/her course, etc.) and as a result of the exchange of ideas with other teachers (social support). In other words, the support provided by the school for instructional technology and the support of teachers to each other for instructional technologies has a reducing effect on technostress. Similarly, in the research conducted by Stevens et al. (2018) with social studies teachers, they emphasized that the support provided by the school for the integration of instructional technology reduces a load of social studies teachers in adapting to current digital tools. In the research conducted by Zhao et al. (2021), it was also concluded that the support for technology integration provided by the institution makes the learning environment more efficient so that the technostress levels of educators are reduced. Similarly, Shriner et al. (2010) also stated the need for external support so that social studies teachers can integrate technology into the teaching process and use digital tools effectively within the scope of the curriculum. Debele and Plevyak (2012) emphasized that this external support could be other social studies teachers working at the school. Penado-Abilleira et al. (2021) stated that the level of technostress also increased as a result of the fact that the needs of teachers and the school support provided for teaching technology were incompatible. Ayyagari et al. (2011) emphasized that the emergence of technostress will become easier when the needs of the individual and the incompatibility of the environment conflict by considering this situation within the scope of the person-environment fit model.

Job satisfaction is related to meeting the expectations of teachers in their professional lives and their perspectives towards the job. As a result of the research, it is seen that there is a significant negative relationship between job satisfaction and technostress and after the job satisfaction variable was included in the hierarchical multiple regression model, it was found that there was a significant change in the range of 5% to 15% in explaining the variance. In other words, as the internal and external job satisfaction of social studies teachers increases, their technostress levels decrease. This conclusion is also supported by other studies (Ayyagari et al., 2011; Jena, 2015; Li ve Wang, 2021; Ragu-Nathan et al., 2008; Tarafdar et al., 2007; Wang & Li, 2019). For example, Li and Wang (2021) stated in their study that techno-complexity and techno-insecurity dimensions of technostress have significant effects on the professional lives of educators. In other words, the fact that individuals perceive technology as a complex structure and feel insecure when using it affects their perspective on their job and reduces productivity. Similarly, this is also confirmed by Jena (2015). The researcher concluded that the educator, who is in a state of technological stress, experiences dissatisfaction in terms of job satisfaction. Curry and Cherner (2016) stated in their research that the integration of technology into social studies teaching has become inevitable, and the perspective of the social studies teacher in his/her field has also been effective in revealing this skill. In the research conducted by Kumar et al. (2013), it was found that due to technostress, individuals develop negative feelings about their job, their productivity decreases, they have problems with continuing to work, and they have difficulties in fulfilling their duties, so that job satisfaction decreases.

Technostress has become an important threat during the period of the Covid-19 pandemic, which has increased visibility and is increasingly affecting educators from a psychological point of view. In today's world, where instructional technologies and technological devices are diversified in a groundbreaking way, the concept of technostress needs to be examined in detail for educators to continue their professional life in a healthy way from a psycho-social point of view. The aim of this study is to examine the effect of gender, TPACK, school support, and job satisfaction variables on the prediction of the technostress levels of social studies teachers. Although important results have been reached as a result of this research, there are also some basic limitations. Firstly, the research was carried out in a process where the Covid-19 pandemic has led teachers to teach online. Therefore, technostress levels of participants may have been further increased due to the reasons such as reluctance of the participants to continue teaching online, their self-efficacy in online teaching, or their inability to receive adequate support from the school (Chou & Chou, 2021; Joo et al., 2016; Özgür, 2020; Sokal, Trudel, & Babb, 2020). In this study, these individual and environmental factors are considered as limitations. In future research, teachers' technostress levels can be evaluated from a different perspective in the post-Covid-19 pandemic period, after becoming more prone to online teaching. This research was conducted with 270 social studies teachers. In future studies, this number can be increased, and a correlational survey study can be conducted by using the variables in our study with a larger sample. In addition, the relationships between technostress and variables of gender, TPACK, school support, and job satisfaction were examined in this research. Based on this limitation, new studies can be designed on different variables that affect technostress. As a result of this research, it is determined that the high level of social studies teachers' TPACK competency and the support he/she receives from the school are important factors that reduce technostress. Therefore, technostress levels of teachers can be reduced by strengthening the technology culture in schools, the support mechanisms for technology integration, and the TPACK competencies of teachers. In addition, it is concluded that the increase in job satisfaction reduces technostress. In this way, educational policies that increase the job satisfaction of teachers can be applied to reduce the level of technostress. In this study, it is found that the technostress levels of male teachers are lower than female teachers. The reasons for this result can be examined by qualitative research methods such as case study or phenomenology research. When examined from a holistic point of view, the psychological load caused by technology on social studies teachers can be reduced by implementing teacher-centered instructional technology competency and integration policies. In addition, hierarchical multiple regression analysis was performed within the scope of our research. In other studies, modeling research can be designed from a different perspective than this analysis process. In a different research, phenomenology research can be conducted with social studies teachers who have experienced technostress. Finally, this research is limited to social studies teachers. In different studies, variables that predict technostress can be investigated by focusing on different branches.

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