RESEARCH ARTICLE

Social studies teacher competencies in 2050: an e-Delphi study

Tugce Zehra Kizilgol[1] and Koray Kasapoglu[2,3]*

Abstract

With the input of 16 experts from a variety of social studies disciplines—including anthropology, art, communication, curriculum and instruction, economics, geography, history, law, measurement and assessment, philosophy, politics, psychology, social studies education, sociology, technology, and Turkish language and literature—as well as two social studies teachers, the goal of this research is to determine the competencies that a social studies teacher should possess in 2050. This mixed-method research was designed using the exploratory sequential design and modified Delphi technique. The study group was determined using the maximum variation sampling technique. The whole Delphi process was carried out online due to the COVID-19 pandemic. The analyses showed that the participants agreed on 1 competency under the "Knowledge" theme, 24 competencies under the "Skill" theme, and 6 competencies under the "Attitude" theme regarding the competencies that a social studies teacher should possess in 2050.

Keywords Social studies, Teacher competencies, e-Delphi, Futurism, 2050

Introduction

The transformative effect of education on individuals and society imposes important responsibilities on politicians and education administrators to plan for the future in the realization of future goals [1]. In addition, the fact that it provides opportunity for raising individuals for jobs that have not yet been created, technologies that have not yet been invented, and for all kinds of problems they may face in the future [2] with the question "What should we do?" (Bell, 2001 as cited in [3]) clearly emphasizes the importance of future research in terms of education. It is clear that the goals expected to be achieved in the future cannot be achieved with the problems and uncertainties experienced in today's education process. Considering that the education process is a long and demanding process and that a generation grows up in at least 25–30 years [4], the importance of planning the education process in the future perspective becomes clear.

The futuristic perspective aiming to determine a road map for the future [5] constitutes an important thought system in structuring the education system of the future. The futuristic perspective evaluates future transformations in the focus of technology [6] and adopts technology as a factor that will accelerate social transformations [5]. For example, on the website named "Earth 2050 by Kaspersky" [7] (https://2050.earth/), future descriptions of 2030, 2040, and 2050 are included, and future descriptions of the changes that different countries will go through in many aspects of life are presented to the readers with the prepared visuals. In the descriptions of education, technology is emphasized, and it is even depicted that the education processes will continue in out-of-school environments with robots and artificial intelligence technologies (https://2050.earth/).

The transition from the traditional education system dominated by a teacher-centered approach to a learner-centered education system that makes the learner active is a good example in terms of seeing the reflections of this

*Correspondence:
Koray Kasapoglu
kasapoglu@aku.edu.tr
[1] Graduate School of Social Sciences, Afyon Kocatepe University, Afyonkarahisar, Türkiye
[2] Faculty of Education, Afyon Kocatepe University, Afyonkarahisar, Türkiye
[3] Faculty of Education, Department of Educational Sciences, Afyon Kocatepe University, 03200 Afyonkarahisar, Turkey

change in today's education system. Teachers, who were in the position of conveying information in the past, have become a guide, a coach, or even a mentor, guiding students in their learning processes, with the revision of the education system in accordance with the requirements of the age. Even this change in teacher roles clearly shows that the education system does not have a static feature [8] and compels us to reconsider the future competencies of teachers in general and of social studies teachers in particular.

Social studies teacher competencies

The standards published by National Council for the Social Studies (NCSS) [9] are an important source in determining social studies teacher competencies in the world. The National Standards for Social Studies Teachers were first created by a NCSS task force appointed in 1995 and authorized by the NCSS Board of Directors in April 1997. The task force worked hard for 3 years, soliciting feedback and reactions from educators nationwide via e-mail and World Wide Web correspondence, as well as public hearings. Every communication received was taken seriously. As the standards have been issued in roughly 5-year cycles, a subsequent task force revised them, seeking input in the same way that its predecessor did. The NCSS Board of Directors approved the revision in September 2002. The 1997 and 2002 standards place emphasis on (1) subject matter expertise and teaching proficiency as well as the (2) professional competence of candidates recommended for licensure by teacher education institutions [10]. The document, namely, Expectations of Excellence: Curriculum Standards for Social Studies, which outlined the knowledge and skills that pre-K–12 students were expected to possess through 10 thematic standards [11], had a significant impact on the 2002 NCSS standards [9]. After the standards had been adopted, NCSS submitted these standards to the Specialty Area Studies Board of the National Council for Accreditation of Teacher Education, which approved them in 2003 [12]. On January 1, 2018, the National Standards for the Preparation of Social Studies Teachers, revised in 2017, went into effect [9]. The competencies that social studies teachers should have in order to carry out a qualified social studies teaching are presented within the scope of five standard areas in the document titled "National Council for the Social Studies National Standards for the Preparation of Social Studies Teachers" published by NCSS [9]:

- Standard 1. Content knowledge: Social studies teacher candidates are expected to be familiar with the concepts, facts, and tools, as well as disciplinary inquiry and forms of representation, in civics, eco-

nomics, geography, history, and the social/behavioral sciences.
- Standard 2. Application of content through planning: Social studies teacher candidates are expected to design learning sequences that make use of technology, social studies theory and research, and knowledge and literacy in order to support learners' civic competence.
- Standard 3. Design and implementation of instruction and assessment: Social studies teacher candidates are expected to create and deliver instruction and authentic assessments that are based on data literacy and learner self-assessment in order to promote civic competence.
- Standard 4. Social studies learners and learning: Social studies teacher candidates are expected to construct collaborative, interdisciplinary learning environments, plan and execute relevant and responsive pedagogy, and teach students to be knowledgeable advocates for a just and inclusive society.
- Standard 5. Professional responsibility and informed action: Social studies teacher candidates are expected to evaluate and deepen their understanding of social studies, questioning skills, and civic attitudes to take responsible action in communities and/or schools in order to advance social justice and human rights.

In Türkiye, the first formal study on teacher competencies began in 1998. Teacher training standards and accreditation studies were carried out in 1998–1999 as part of the "Pre-Service Teacher Training of the National Education Development Project" with the collaboration of Higher Education Council of Türkiye (HEC) and the World Bank. The teacher competencies in this project were classified into four categories: "competencies regarding content knowledge and pedagogical content knowledge", "competencies on the teaching-learning process", "monitoring, evaluation, and recording of students' learning"; and "complementary professional competencies." In 1999, the Ministry of National Education (MoNE) launched its first official investigation into teacher competencies. Initially, the "Teacher Competencies Commission" was formed, comprising officials from the MoNE and different universities. In accordance with the Basic Law 1739 of National Education, teacher competencies were developed under three headings, namely "education-teaching competencies," "general cultural knowledge and skills," and "field knowledge and skills" and officially authorized in 2002. The Basic Education Support Program funded the next study on teacher competencies. One of the five components of this project which began in 2002 was teacher training. For teacher training, the Directorate General for Teacher Training

and Education was in charge of the activities. In 2004, a workshop was held to determine teacher competencies within the scope of this project. Previous work of the HEC and the MoNE, as well as competency documents from different countries, was examined to seek a common understanding of the concepts and terms pertaining to teacher competencies. To make them compatible with EU countries, teacher competencies were redetermined, and general competencies for teaching were drafted as a result of workshops, pilot studies, and views of stakeholders including national and international experts, academicians, teachers, and various participants. The draft included the following six domains of general teacher competencies: (a) personal and professional values — career advancement; (b) learning about the student; (c) the process of learning and teaching; (d) monitoring and evaluating students' learning and development; (e) relationships at school, in the family, and in the community; and (f) curriculum and content knowledge. Then, the draft was finalized through workshops led by ministry representatives, academicians, inspectors, and union representatives and officially authorized in 2006. Then, efforts were made to determine the subject teacher competencies conceptualized as the knowledge, skills, and attitudes that teachers must possess in relation to their own subjects. As a result, subject-specific competencies for primary and middle school teachers were developed and officially authorized in 2008 [13]. The competencies that a social studies teacher should have in Türkiye were determined by the MoNE [14] and presented within the scope of "Social Studies Teacher Competencies." The areas and competencies that social studies teachers in Türkiye should have are presented in Table 1.

As can be understood from Table 1, social studies teacher competencies in Türkiye were grouped under five competency areas namely, planning and organizing the teaching process; learning-teaching process; monitoring and assessment; collaborating with school, family, and community; and ensuring professional development ([14]: 174-183).

Table 1 Social studies teacher competencies of Türkiye

Area	Competency
Planning and organizing the teaching process	To be able to plan the teaching process
	To be able to organize learning environments
	To be able to use materials and resources suitable for the teaching process
Learning-teaching process	To be able to invoke awareness of the protection and development of cultural heritage, as well as basic elements and processes that make up Turkish history and culture
	To enable students to perceive the interaction among human, place, and environment
	To enable students to comprehend the effects of economic activities and developments on societies
	To be able to provide the understanding of democratic management and the awareness of the rights that people are born with and gain in society and that they have responsibilities towards people, society, and humanity
	To enable students to understand the basic principles on which Atatürk's principles and reforms are based and the historical meaning of the Turkish revolution and its importance and effects on the political, social, cultural, and economic development of the society
	To be able to do practices that take into account students with special needs and students who need special education
Monitoring and assessment	To be able to determine the purposes of measurement and assessment practices
	To be able to use measurement and assessment tools and methods
	To be able to assess the data obtained from the measurement tool used in the teaching process
Collaborating with school, family, and community	To be able to collaborate with families in the development of the students on the subjects they will need in daily life
	To enable students to realize the meaning and importance of national holidays and ceremonies and to actively participate in the ceremonies
	To be able to manage and organize national holidays and ceremonies
	To be able to collaborate with the community in making the school a culture and learning center
	To be able to act as a social leader
Ensuring professional development	To be able to identify professional competencies
	To be able to ensure personal and professional development related to social studies teaching
	To be able to benefit from scientific research methods and techniques in professional development practices

Source: [14]: 174-183

In order to accommodate the latest advancements in education and innovations in the Turkish educational system, the general teacher competencies were updated in 2017. Throughout the process of updating the general teacher competencies, a wide range of stakeholders including the HEC, Assessment, Selection and Placement Center, the Vocational Qualifications Authority, the Board of Education and Training, and the other units of the ministry as well as academicians and teachers were consulted. To make sure that there was widespread participation in updating the teacher competencies, meetings with stakeholders were arranged. During this process, competency documents from numerous countries, including the US, Australia, Finland, France, Hong Kong, the UK, Canada, and Singapore, were also reviewed in addition to basic policy documents on education and teaching from international organizations like the European Council, the World Bank, ILO, OECD, UNESCO, and UNICEF. Instead of identifying subject teacher competencies, general teacher competencies were updated through adding content knowledge and pedagogical content knowledge. Since 2017, the general teacher competencies have been categorized under the following three domains: "professional knowledge," "professional skills," and "attitudes and values" [13].

When the national and international research on social studies teacher competencies is examined, it is seen that studies are generally carried out for a single competency area, and they are especially focused on technological competencies. At this point, it was determined that technological pedagogical content knowledge [15–21] and techno-pedagogical education/technological competencies [22–24] were studied. However, as it can be understood from the relevant literature, no research has been found that examines social studies teacher competencies in the focus of the broad field approach of social studies. In the studies mentioned above, it has been observed that the sample/study group generally consisted of teachers and teacher candidates. However, it is thought that focusing on teachers and teacher candidates alone is not enough in determining teacher competencies because sometimes the whole picture cannot be seen in the ongoing process. For this reason, it is thought that more qualified results will be obtained by making use of the richness of the multidisciplinary structure of social studies in the selection of participants.

Purpose and significance of the research

The objective of this research is to determine social studies teachers' competencies in 2050 as a result of the e-Delphi process, which was created with input of experts in a variety of social studies disciplines and social studies teachers. In this research, answers were sought for the question as follows: "What are the competencies that a social studies teacher should have in 2050?"

It is believed that individual disciplines are not adequately represented in research on social studies teacher competencies. Besides social studies teachers, it was hoped that the inclusion of the experts to represent each discipline would add further originality to this research. In addition, discussing teacher competencies via an assessment in a future perspective based on the year 2050 makes the study unique because no futuristic research has been found that assesses social studies teacher competencies by taking the year 2050 as a reference. In this context, it is foreseen that it will be a pioneering research in the related field.

Method

Research design

This mixed-method research involved the integration of qualitative and quantitative findings through the use of the exploratory sequential design [25] and modified Delphi technique. In the current research, it was aimed to firstly examine the views of experts from different social studies disciplines and teachers in depth and then to present all the findings with a holistic perspective by supporting them with quantitative data. In the current research, aiming to determine "what could/should be" the competencies of a social studies teacher in 2050 was an important factor in the preference of the Delphi technique. While common questionnaires try to determine "what is," focusing on "what could/should be" in Delphi technique (Miller, 2006 cited in [26]) carries it to a position related to predictions for the future [27]. With the Delphi technique, which is based on the goal of reaching stability [28] from the views of independent experts who are unaware of each other without face-to-face interaction [29], experts are given the opportunity to add, change, or maintain their individual responses with the feedback provided. In this research, the modified e-Delphi technique was preferred. The modified Delphi technique differs from the traditional Delphi technique with the individual or focus-group interviews held in the first round. The most important advantage of the technique is seen as "enhancing the response rate and creating a more solid basis for research in line with previous studies" ([30]: 268). For this reason, in the first e-Delphi round, semi-structured interviews were carried out with all experts and teachers involved in the research process. Thus, with the comprehensive data obtained in the first round, it was aimed to base the second and third e-Delphi rounds on more solid information and to reach more qualified results.

Sampling

Maximum variation sampling, as a purposive sampling method, was preferred to find out what kind of commonalities or similarities exist between diverse cases [31]. Given this, the first e-Delphi round comprised 16 academicians with expertise in a range of social studies-related fields, namely anthropology, art, communication, curriculum and instruction, economics, geography, history, law, measurement and assessment, philosophy, politics, psychology, social studies education, sociology, technology, and Turkish language and literature, as well as two social studies teachers. These 16 academicians, who included professors, associate professors, and assistant professors, were faculty whose primary responsibility was to teach students. The experts to be invited to the research were reached from the HEC academic [32] database, and 175 experts who met the necessary criteria for the research were determined. The "Participant Invitation and Information Letter" was sent to the experts by e-mail, enabling them to both be invited to the research and get information about the research process. Thus, 18 participants were determined to be included in the research process. Rowe and Wright [33] stated that it is sufficient for the scope of the research to consist of 5 to 20 experts. It is believed that this determined number is also suitable for the purpose and method of the research problem. The second and third e-Delphi rounds comprised 15 academicians and 1 social studies teacher due to loss of subjects.

Data collection

The entire Delphi process was completed online because of the COVID-19 pandemic. In the first e-Delphi round, all participants are expected to reflect on their own views on the topic by contributing additional information they think is relevant [34]. In the first e-Delphi round, qualitative data were obtained using the "Semi-Structured Interview Schedule" developed by the researchers, and quantitative data were gathered through the "e-Delphi Round Two Questionnaire" and "e-Delphi Round Three Questionnaire" in the second and third rounds, respectively. At the end of the first e-Delphi round, the participants are expected to accept, reject, or rate the statements in order to evaluate or reach stability [35].

Although the number of rounds varies in Delphi studies [36], it is generally seen that stability is reached at the end of three rounds [30, 33]. E-Delphi rounds were continued until the level of stability regarding social studies teachers' competencies in 2050 was reached [33]. The e-Delphi process was terminated when the existing responses had reached the targeted level of stability in the third e-Delphi round.

Data analysis

The qualitative data were analyzed utilizing content analysis [31]. "Core consistencies and meanings" ([37], p. 453) found in themes derived from codes assigned to represent data [38] are explored and brought together through content analysis, also referred to as latent analysis [39]. The interview data were coded with inductive coding, and the related codes were grouped into appropriate sub-themes and themes. The data obtained from the experts were conceptualized under three main themes and related sub-themes.

The quantitative data, which were collected in the second and third rounds through a Likert scale to gauge the participants' degree of agreement (1 = strongly disagree and 5 = strongly agree), were computerized, and the values for the mode, median, mean, range, standard deviation, and first and third quartiles were computed. The IQR (interquartile range) value is used to objectively and rigorously determine the stability [30]. Lang (1994) also suggested considering the IQR value as a stability criterion in Delphi studies (cited in [40]). In the current research, an IQR value of 1 or less was deemed sufficient to reach stability [41]. The degree of agreement was based on the standard deviation value. In determining the level of agreement, the standard deviation values expressing the range of $SD \leq 1$ = high-level agreement, $1 < SD \leq 2$ = moderate-level agreement, and $SD > 2$ = low-level agreement [30] were taken into account.

Findings

Qualitative findings — e-Delphi 1st round

The findings were grouped under three main themes. These themes were identified as follows: (1) Knowledge, (2) skill, and (3) attitude. In line with these themes and their sub-themes, competency items were created.

Knowledge   The knowledge that social studies teachers should have in 2050 was categorized in the light of the findings obtained from experts as follows: (1) technological pedagogical content knowledge, (2) general culture knowledge, and (3) curriculum knowledge.

Experts argued that social studies teachers in 2050 should integrate the knowledge of the content, pedagogy, and technology, develop the general culture, and associate the elements of the social studies curriculum (objectives, content, teaching-learning process, and measurement and assessment).

Skill   The skills that social studies teachers should have in 2050 were categorized in light of the data obtained from experts as follows: (1) student-centered, valid, and

reliable measurement and process evaluation, (2) life skills and higher-order thinking skills, (3) use of technology in teaching, (4) egalitarian and democratic thinking, (5) arousing interest in the lesson, (6) coding, (7) digital teaching, (8) (foreign) language skills, (9) futuristic thinking, (10) entrepreneurship, (11) academic honesty, (12) use of mass media, (13) effective communication, (14) teaching in out-of-school learning environments, (15) guidance, (16) teaching self-regulated learning, (17) social skills, (18) providing active and lifelong learning, (19) inclusive education, (20) mixed reality applications (holograms), (21) interdisciplinary teaching, (22) collaboration, (23) use of social media, and (24) distance teaching.

Experts emphasized that social studies teachers in 2050 should develop a measurement and assessment tool that is appropriate for the task, do valid and reliable measurement and assessment, and do student-centered measurement and assessment by evaluating both the process and the product; develop their own cognitive awareness skills (planning, organization, etc.) and their own life and thinking skills (problem-solving, critical thinking, creative thinking, innovative thinking, algorithmic thinking, building empathy, etc.); integrate Web tools (Edmodo, Kahoot, etc.) into the teaching process; create an egalitarian and democratic learning environment; attract student attention to the lesson; use programming languages in lessons; develop students' digital competence and productivity with digital teaching materials; develop their own (foreign) language skills (listening, speaking, reading, writing); develop their own futuristic (future-oriented) thinking skills; develop their own entrepreneurial skills; use plagiarism programs to evaluate student products; guide students toward the use of mass media; communicate effectively with colleagues, students, and parents; integrate out-of-school learning environments into the teaching process; provide effective guidance to students and parents; support students to manage their own learning processes (self-regulated learning); support students' social skills; create learning environments that will enable active learning of students; involve inclusive education practices by taking into account the individual differences of students; enrich the learning environment with virtual, augmented, and mixed reality applications (holograms); benefit from interdisciplinary interaction in the teaching process; collaborate with stakeholders (people, institutions, etc.); use social media platforms effectively; and use distance measurement and assessment tools and distance teaching methods and techniques.

Attitude   The attitudes that social studies teachers should have in 2050 were categorized in light of the data obtained from experts as follows: (1) teacher as a researcher and a learner, (2) willingness to follow change and contemporary developments, (3) loving students, (4) being highly motivated, (5) personal development, (6) being a role model, and (7) commitment to local, national, and universal values.

Experts emphasized that social studies teachers in 2050 should constantly desire to do research and learn, be willing to follow changes and contemporary developments, love children, increase their own internal motivation, take initiative to support their own personal development, be a role model to students, and be committed to local, national, and universal values.

In light of the data obtained from the experts, 3 competency items in the first theme, 32 in the second theme and 9 in the third theme were created. Because each competency must be measurable, more than one competency has been determined for some sub-themes. As a result, the number of competencies created exceeds the number of sub-themes under a theme. Thus, in the first e-Delphi round, 44 competency items were determined.

Quantitative findings — e-Delphi 2nd round
In the second e-Delphi round, 44 competency items were presented to experts' opinions via a questionnaire. The results of the second e-Delphi round are presented in Table 2.

As a result of the second e-Delphi round, it was determined that better stability was reached on 1 item on the "Knowledge" theme but worse on 2 items; better stability was reached on 15 items on the "Skill" theme, but worse stability was reached on 17 items; and better stability was achieved in 4 items on the "Attitude" theme, and worse stability was reached on 5 items. It was therefore decided to hold the third e-Delphi round. The "e-Delphi Round Three Questionnaire" was created with a total of 24 items that the experts reached worse stability in the second e-Delphi round.

Quantitative findings — e-Delphi 3rd round
In the third e-Delphi round, 24 competency items were presented to the opinions of experts via a questionnaire. To allow the panel to discuss their responses, the e-Delphi Round Two Questionnaire responses and the mode, median, mean, range, standard deviation, first quartile, and third quartile values were added to each item in tables in the e-Delphi Round Three Questionnaire. The results of the third e-Delphi round are presented in Table 3.

As a result of the third e-Delphi round, it was determined that worse stability was reached on 2 items of

Table 2 Results of the second e-Delphi round

A social studies teacher in 2050		Mode	Median	M	Range	SD	Q₁	Q₃	IQR	Agreement	Level of agreement
Knowledge	Integrates knowledge of the content, pedagogy, and technology	5.00	5.00	4.25	4.00	1.12	4.00	5.00	1	+	Moderate
	Develops her/his general culture.	4.00	4.00	4.06	2.00	0.77	3.25	5.00	1.75	-	
	Associates the elements of the social studies curriculum (objectives, content, teaching-learning process, and measurement-assessment)	4.00	4.00	4.00	3.00	1.03	3.25	5.00	1.75	-	
Skill	Designs a measurement and assessment tool that is appropriate for the task	5.00	4.00	4.12	3.00	1.02	4.00	5.00	1	+	Moderate
	Creates a democratic learning environment	4.00	4.00	4.25	2.00	0.68	4.00	5.00	1	+	High
	Develops digital competence and productivity of students with digital teaching materials	4.00	4.00	4.00	3.00	0.82	4.00	4.75	0.75	+	High
	Creates an egalitarian learning environment	4.00	4.00	4.06	3.00	0.85	4.00	5.00	1	+	High
	Does valid and reliable measurement and assessment	5.00	4.00	4.25	2.00	0.77	4.00	5.00	1	+	High
	Develops her/his own cognitive awareness skills (planning, organization, etc.)	4.00	4.00	4.31	2.00	0.70	4.00	5.00	1	+	High
	Develops her/his own futuristic/future-oriented thinking skills	4.00	4.00	4.18	3.00	0.83	4.00	5.00	1	+	High
	Communicates effectively with colleagues	4.00	4.00	4.18	2.00	0.66	4.00	5.00	1	+	High
	Enriches the learning environment with virtual, augmented and mixed reality applications (holograms)	5.00	4.50	4.25	3.00	0.93	4.00	5.00	1	+	High
	Uses distance teaching methods and techniques	5.00	5.00	4.56	2.00	0.63	4.00	5.00	1	+	High
	Uses distance measurement and assessment tools.	5.00	5.00	4.37	3.00	0.96	4.00	5.00	1	+	High
	Integrates Web tools (Edmodo, Kahoot, etc.) into the teaching process	5.00	5.00	4.37	3.00	0.86	4.00	5.00	1	+	High
	Uses programming languages in her/his lessons	3.00	3.50	3.37	4.00	1.25	3.00	4.00	1	+	Moderate
	Uses social media platforms effectively	5.00	4.00	4.12	3.00	1.02	4.00	5.00	1	+	Moderate
	Provides effective guidance to parents.	3.00	3.50	3.43	4.00	1.15	3.00	4.00	1	+	Moderate
	Draws the attention of the student to the lesson	3.00	4.00	4.00	2.00	0.89	3.00	5.00	2	-	
	Evaluates both the process and the product and does student-centered measurement and assessment	4.00	4.00	4.00	2.00	0.73	3.25	4.75	1.5	-	
	Uses plagiarism programs to evaluate student products	4.00	4.00	3.81	4.00	1.16	3.00	5.00	2	-	
	Develops her/his own (foreign) language skills (listening, speaking, reading, writing)	4.00	4.00	3.75	4.00	1.18	3.00	5.00	2	-	
	Develops her/his own entrepreneurial skills.	5.00	3.50	3.56	4.00	1.45	2.00	5.00	3	-	
	Develops her/his life skills and thinking skills (problem-solving, critical thinking, creative thinking, innovative thinking, algorithmic thinking, building empathy, etc.)	4.00	4.00	3.93	2.00	0.77	3.00	4.75	1.75	-	
	Guides students toward the use of mass media	4.00	4.00	3.68	4.00	1.30	3.25	4.75	1.5	-	
	Integrates out-of-school learning environments into the teaching process	5.00	4.00	4.00	3.00	0.97	3.00	5.00	2	-	
	Provides effective guidance to students	3.00	4.00	3.68	4.00	1.19	3.00	5.00	2	-	
	Supports students to manage their own learning processes (self-regulated learning)	5.00	4.00	4.12	2.00	0.89	3.00	5.00	2	-	
	Supports students' social skills	4.00	4.00	4.06	2.00	0.77	3.25	5.00	1.75	-	

Table 2 (continued)

A social studies teacher in 2050		Mode	Median	M	Range	SD	Q₁	Q₃	IQR	Agreement	Level of agreement
	Creates learning environments that will enable active learning of her/his students	4.00	4.00	4.06	2.00	0.77	3.25	5.00	1.75	-	
	Involves inclusive education practices by taking into account the individual differences of students	4.00	4.00	3.81	3.00	0.91	3.00	4.75	1.75	-	
	Communicates effectively with students	4.00	4.00	4.06	2.00	0.77	3.25	5.00	1.75	-	
	Benefits from interdisciplinary interaction in the teaching process	5.00	4.50	4.18	3.00	0.98	3.25	5.00	1.75	-	
	Collaborates with stakeholders (people, institutions, etc.)	4.00	4.00	4.12	2.00	0.81	3.25	5.00	1.75	-	
	Communicates effectively with parents	3.00	4.00	3.81	2.00	0.83	3.00	4.75	1.75	-	
Attitude	Is always willing to do research	4.00	4.00	4.18	2.00	0.75	4.00	5.00	1	+	High
	Is willing to follow the changes	4.00	4.00	4.18	2.00	0.66	4.00	5.00	1	+	High
	Takes an initiative to support her/his own personal development	4.00	4.00	4.12	2.00	0.62	4.00	4.75	0.75	+	High
	Becomes a role model for students	3.00	4.00	3.62	4.00	1.02	3.00	4.00	1	+	Moderate
	Is willing to follow contemporary developments	5.00	4.00	4.18	2.00	0.83	3.25	5.00	1.75	-	
	Loves children	4.00	4.00	3.93	2.00	0.77	3.00	4.75	1.75	-	
	Increases her/his own internal motivation	3.00	3.50	3.75	2.00	0.86	3.00	4.75	1.75	-	
	Is always willing to learn	4.00	4.00	3.93	2.00	0.77	3.00	4.75	1.75	-	
	Is committed to local, national, and universal values	4.00	4.00	3.87	3.00	0.89	3.00	4.75	1.75	-	

Table 3 Results of the third e-Delphi round

A social studies teacher in 2050		Mode	Median	M	Range	SD	Q₁	Q₃	IQR	Agreement	Level of agreement
Knowledge	Develops her/his general culture	4.00	4.00	4.06	2.00	0.77	3.25	5.00	1.75	-	
	Associates the elements of the social studies curriculum (objectives, content, teaching-learning process and measurement-assessment)	4.00	4.00	3.81	4.00	1.10	3.25	4.75	1.50	-	
Skill	Develops her/his life skills and thinking skills (problem-solving, critical thinking, creative thinking, innovative thinking, algorithmic thinking, building empathy, etc.)	4.00	4.00	4.00	3.00	0.73	4.00	4.00	0	+	High
	Supports students to manage their own learning processes (self-regulated learning)	4.00	4.00	4.31	2.00	0.70	4.00	5.00	1	+	High
	Supports students' social skills.	4.00	4.00	4.12	2.00	0.62	4.00	4.75	0.75	+	High
	Creates learning environments that will enable active learning of her/his students	5.00	4.00	4.25	2.00	0.77	4.00	5.00	1	+	High
	Communicates effectively with students	4.00	4.00	4.00	3.00	0.82	4.00	4.75	.75	+	High
	Benefits from interdisciplinary interaction in the teaching process	5.00	5.00	4.37	3.00	0.89	4.00	5.00	1	+	High
	Collaborates with stakeholders (people, institutions, etc.).	4.00	4.00	4.18	2.00	0.75	4.00	5.00	1	+	High
	Guides students toward the use of mass media	4.00	4.00	3.62	4.00	1.14	3.00	4.00	1	+	Moderate
	Provides effective guidance to students	4.00	4.00	3.56	4.00	1.09	3.00	4.00	1	+	Moderate
	Draws the attention of the student to the lesson	4.00	4.00	4.00	2.00	0.73	3.25	4.75	1.5	-	
	Evaluates both the process and the product and does student-centered measurement and assessment	4.00	4.00	3.93	3.00	0.85	3.25	4.75	1.5	-	
	Uses plagiarism programs to evaluate student products	4.00	4.00	3.81	4.00	1.16	3.00	5.00	2	-	
	Develops her/his own (foreign) language skills (listening, speaking, reading, writing)	4.00	4.00	3.87	4.00	1.08	3.00	5.00	2	-	
	Develops her/his own entrepreneurial skills	5.00	4.00	3.56	4.00	1.31	2.25	5.00	2.75	-	
	Integrates out-of-school learning environments into the teaching process	5.00	4.00	3.93	3.00	1.06	3.00	5.00	2	-	
	Involves inclusive education practices by taking into account the individual differences of students	4.00	4.00	3.87	3.00	0.89	3.00	4.75	1.75	-	
Attitude	Communicates effectively with parents	4.00	4.00	4.00	2.00	0.82	3.00	5.00	2	-	
	Is willing to follow contemporary developments	5.00	4.00	4.25	2.00	0.77	4.00	5.00	1	+	High
	Is committed to local, national, and universal values	4.00	4.00	4.12	2.00	0.72	4.00	5.00	1	+	High
	Loves children	4.00	4.00	4.00	2.00	0.73	3.25	4.75	1.5	-	
	Increases her/his own internal motivation	4.00	4.00	3.87	3.00	0.89	3.00	4.75	1.75	-	
	Is always willing to learn	4.00	4.00	4.00	3.00	0.89	3.25	5.00	1.75	-	

the theme of "Knowledge" again, there was no change to meet the better stability criterion in 8 of the 17 items of the "Skill" theme, and there was no change in the direction of worse stability in 3 of the 5 items of the theme of "Attitude." For this reason, it was decided to terminate the e-Delphi process with the third e-Delphi round. With the removal of 13 items on which worse stability was reached as a result of the e-Delphi process, the social studies teacher competencies of 2050 took their final form in Table 4.

Discussion, conclusions, and recommendations

One of the competencies with which better stability was achieved regarding the "Knowledge" theme is determined as "A social studies teacher in 2050 integrates knowledge of the content, pedagogy and technology." A teacher who will carry out an effective teaching process must gain competency in all necessary types of knowledge and be able to integrate pedagogical knowledge, content knowledge, and technological knowledge [21]. Demirezen and Keleş [17] concluded that social studies teachers' knowledge in one field increased with the increase in their knowledge in the other fields in terms of TPACK. According to Schmidt et al. [42], TPACK emphasizes how important it is for teachers to have an institutional grasp of the complex relationships that exist between the three components of knowledge (i.e., pedagogical knowledge, technological knowledge, and content knowledge).

The results of the research showed that within the scope of the "Skill" theme, better stability was achieved with various competencies related to measurement and assessment in 2050. These competencies were determined as "designing a measurement and assessment tool that is appropriate for the task" and "doing a valid and

Table 4 Social studies teacher competencies of 2050 as a result of the e-Delphi process

Theme	Item no.	In 2050, a social studies teacher …
Knowledge	1	Integrates knowledge of the content, pedagogy, and technology
Skill	1	Designs a measurement and assessment tool that is appropriate for the task
	2	Creates a democratic learning environment
	3	Uses programming languages in her/his lessons
	4	Develops digital competence and productivity of students with digital teaching materials
	5	Creates an egalitarian learning environment
	6	Does valid and reliable measurement and assessment
	7	Develops her/his own cognitive awareness skills (planning, organization, etc.)
	8	Develops her/his own futuristic/future-oriented thinking skills
	9	Develops her/his life skills and thinking skills (problem-solving, critical thinking, creative thinking, innovative thinking, algorithmic thinking, building empathy etc.)
	10	Guides students toward the use of mass media
	11	Communicates effectively with colleagues
	12	Provides effective guidance to students
	13	Supports students to manage their own learning processes (self-regulated learning)
	14	Supports students' social skills
	15	Creates learning environments that will enable active learning of her/his students
	16	Communicates effectively with students
	17	Enriches the learning environment with virtual, augmented, and mixed reality applications (holograms)
	18	Benefits from interdisciplinary interaction in the teaching process
	19	Collaborates with stakeholders (people, institutions, etc.)
	20	Uses social media platforms effectively
	21	Uses distance teaching methods and techniques
	22	Uses distance measurement and assessment tools
	23	Provides effective guidance to parents
	24	Integrates Web tools (Edmodo, Kahoot, etc.) into the teaching process
Attitude	1	Is always willing to do research
	2	Is willing to follow contemporary developments
	3	Is willing to follow the changes
	4	Takes an initiative to support her/his own personal development
	5	Becomes a role model for students
	6	Is committed to local, national, and universal values

reliable measurement and assessment." As Baştürk et al. [43] mentioned, a valid and reliable measurement is an important element that enables the determination of the extent to which the desired outcome to be measured is achieved. For this reason, it is believed that a social studies teacher should do a valid and reliable measurement and assessment in 2050.

In light of the results obtained, it was determined that better stability was achieved with various competencies in order to create a democratic and egalitarian learning environment in 2050. As emphasized by Duman and Şahiner [44], social studies course should be able to provide students with democratic values. The factors that cause inequality of opportunity in the field of education are grouped by Bilgin and Erbuğ [45] in five dimensions as "economic, social, geographical/regional, biological and political." For this reason, it is of great importance to create an egalitarian education process for individuals. It is seen that the value of "equality" is among the values to be taught within the scope of social studies course [46], and social studies teachers have a big responsibility in this context.

The results also showed that better stability was achieved with a social studies teacher's adaptation to technological transformations in 2050. All these changes have led to the necessity of meeting various expectations brought by the twenty-first century for teachers [47]. In this context, there is a need for an educational process that includes design, production, and programming, namely coding [48]. The "digital literacy" skill which is aimed to be taught within the scope of basic skills in the social studies curriculum [46] also reveals the necessity of integrating digital materials into the process of social studies teaching. In the research conducted by Beldağ and Yaylacı [49] with social studies teacher candidates, it was revealed that teacher candidates see technological equipment in schools and classrooms as vital elements for successful studies. Based on these facts, a social studies teacher should integrate all elements of technology with appropriate pedagogical methods and relevant content knowledge [50]. Studies have clearly shown that virtual, augmented, and mixed reality applications in social studies course increase the academic success of students [51], attract more attention, provide lifelong learning [52], are found enjoyable [53], and increase students' love for the lesson [54]. Accordingly, better stability was achieved with a social studies teacher's enriching the learning environment with virtual, augmented, and mixed reality applications (holograms). The conclusion of Bilici [55] that social studies teachers' sharing of educational content via social media applications has increased, especially during the pandemic, clearly shows that the integration of social media platforms into the

education process has accelerated. In light of these findings, it has been understood that better stability was achieved with a social studies teacher's effective use of all social media platforms that students actively use. It has been determined by experts that the use of Edmodo [56] and Kahoot [57] platforms in the teaching process has positive effects despite various limitations. For this reason, it has been concluded that integrating Web tools (Edmodo, Kahoot, etc.) into the teaching process is one of the competencies with which better stability was achieved.

In light of the findings obtained as a result of this research, it was concluded that better stability was achieved with various competencies related to guidance in 2050. It is especially important that social studies teachers guide students in the use of mass media because the "media literacy" skill, which aims to provide conscious use of mass media, is among the basic skills aimed to be taught in the social studies curriculum [46]. With the constructivist education reform [58] in the 2005–2006 academic year, the teacher took on the responsibility of facilitator of learning. For this reason, it is believed that teachers should guide students and parents on many issues required by the era.

In light of the findings obtained, it was concluded that better stability was achieved with various competencies related to distance education in 2050. The global pandemic process has accelerated the use of distance teaching methods and techniques in education processes [59]. Despite various difficulties faced in this process [60], it has been understood that effective and beneficial education environments [61] should be created with distance education applications structured with the digital tools of the age.

As a result of this e-Delphi study, it was seen that the experts emphasized the importance of the interdisciplinary interaction of social studies while expressing the competencies of a social studies teacher in 2050. It is clear that an understanding that considers the social studies course to consist only of geography, history, and citizenship [62] cannot find a place in today's education, where the multifaceted development of the individual has gained importance [63]. In this respect, it is believed that the interdisciplinary approach will have a greater importance in 2050.

In light of the findings obtained, it was also concluded that better stability was achieved with various competencies related to thinking skills in 2050. With the acquisition of cognitive awareness skill and the skills of planning, organization, monitoring, and evaluation will support meaningful learning [64]. Individuals who can think futuristically have the ability to think farsighted and future-oriented [5]. Besides, "critical thinking,

empathy, communication, decision making, problem solving, innovative thinking" are among the "basic skills aimed to be acquired by students" in the social studies curriculum [46]. The results clearly reveal that social studies teachers play a special role in acquiring life skills by the students. As Erduran Avcı and Selçuk [65] stated, in order for students to be trained in accordance with the desired skills, the social studies teachers must first have these skills and feel themselves sufficient in this regard.

In light of the results obtained, it was concluded that better stability was achieved with various competencies related to communication in 2050. As a result of the research conducted by Ersoy and Yağcıoğlu [66] with social studies teacher candidates, the fact that teacher candidates expressed their "effective communication skills" as the skill they most want to acquire during their undergraduate education is in parallel with the result obtained. The fact that communication skills are included in the scope of "basic skills" in the social studies curriculum [46] also imposes a big responsibility on social studies teachers.

In 2050, the competencies with which better stability was achieved are creating active learning environments and supporting students to manage their own learning processes. It is noteworthy that social studies teachers often teach their lessons with traditional methods that make students passive [67]. For this reason, it is believed that it is necessary for a social studies teacher in 2050 to "equip teaching with different and new methods and techniques" ([68]: 5). In addition, it is of great importance that teachers create an environment that supports the acquisition of self-regulated learning skill [69], which is expressed as "taking responsibility for her/his own learning, being aware of her/his own learning deficiencies, giving effort and studying within a plan to overcome her/his own learning deficiencies" ([70]: 1).

In light of the results obtained, one of the competencies with which better stability was achieved is "supporting students' social skills." As Sarılarhamamı and Demirkaya [71] emphasized, the social studies course, which connects life with curricula, is an important course in which the foundations are laid for raising the targeted social individual [72]. It is believed that the next generation will need more support in terms of developing their social skills due to the negative consequences of digital processes. According to the results, better stability was also achieved with a social studies teacher's collaborating with stakeholders (people, institutions, etc.). An effective education requires the collaboration of experts [73], family [74], and all effective stakeholders in the education process.

One of the competencies with which better stability was achieved within the scope of the "Attitude" theme is

determined as "being always willing to do research." The fact that the research skill is among the basic skills aimed to be acquired by the students in the social studies curriculum [46] is in parallel with this result. The development of students' research skills is directly proportional to the competency in the mentioned skill and professional knowledge of teachers [75]. In addition, the competencies with which better stability was achieved are determined as "being willing to follow contemporary developments" and "being willing to follow the changes." Correspondingly, teachers who can communicate effectively with the students who have grown up under the conditions of the digital age in the twenty-first century, who can attract their attention, and who will organize the learning-teaching processes in a way that can meet the needs of the age ([76]: 16) are needed. In light of the results obtained, one of the competencies with which better stability was achieved is a social studies teacher's taking an initiative to support her/his own personal development. Teachers need to be well trained in every aspect [77] and be in a constant development, desire, and excitement to learn [78]. Another competency with which better stability was achieved is determined as "becoming a role model for students." The behaviors of the teacher in the classroom affect the students and ensure that the values of the teacher are adopted by the students [79]. For this reason, it is of great importance for teachers to "be aware that they are role models" for students at most points [80]. It is believed that it is of great importance for social studies teachers to internalize the skills and values that are aimed to be acquired by students, especially in the education process. The last competency with which better stability was achieved within the scope of the "Attitude" theme is a social studies teacher's "being committed to local, national and universal values." It is believed that local, national, and universal values are necessary for the fulfillment of the mission of raising good citizens, which is among the main objectives of the social studies course, as well as for raising individuals who are sensitive to global problems and willing to produce solutions to these problems [81]. Considering that many problems such as inequality, migration, climate problem, war, and pandemic might occur in the future, it is believed that gaining all these values for a more liveable world will be an important competency for social studies teachers in 2050.

Upon evaluating the competency items in relation to the existing social studies teacher competencies [14], certain similarities and differences were observed. As a result of the research, it was seen that the competency items obtained in relation to measurement and assessment, a democratic and egalitarian learning environment, active learning environments, materials and resources suitable for the teaching process, integration of technology into

the teaching process, collaboration with stakeholders, and willingness to doing research and taking initiatives to support personal development are associated with the performance indicators within the scope of social studies teacher competencies [14]. However, it was observed that social studies teacher competencies [14] are improved in terms of competencies such as futuristic thinking, development of thinking skills required in the twenty-first century, communication, guidance, interdisciplinary teaching, effective use of social media platforms, and being a role model for students. For this reason, it is believed that the existing social studies teacher competencies [14] might be insufficient to reflect the teacher competencies of the future. Professional knowledge, general culture, and field education courses are part of the social studies teacher training program [82] that aims to build the competencies of a social studies teacher. However, it has been discovered that the aforementioned courses are incompatible with the broad-fields nature of social studies. The fact that field education courses are shaped in the focus of history, geography, and citizenship, as well as the removal or reduction of content knowledge courses (i.e., philosophy, sociology, archaeology, aesthetics, law, economics) from the program [83] clearly supports this judgment. Furthermore, some courses that will provide the competencies that a teacher will need to adapt to 2050 (i.e., open and distance learning, inclusive education, adult education and lifelong learning, human relations and communication, media literacy, information technologies in social studies) are being offered as electives rather than must courses. This situation has a negative impact on the development of teachers' competencies and makes it difficult for them to adapt to both the current and future education systems. It is believed that the program's courses are theory oriented and do not provide pre-service teachers with enough opportunities to practice [84]. Building the future entails more than identifying today's problems and taking steps to change the future [1]. For this reason, it is important to constantly revise the current social studies curriculum [85] and social studies teacher training program in accordance with the requirements of the era.

As a result of this e-Delphi research, it was discovered that worse stability was achieved with two competencies related to general culture knowledge and curriculum knowledge within the scope of the "Knowledge" theme, eight competencies related to arousing interest in the lesson, student-centered measurement and process evaluation, academic honesty, foreign language skills, entrepreneurship, teaching in out-of-school learning environments, inclusive education, effective communication with parents within the scope of the "Skill" theme, and three competencies related to loving children, desire

to learn, and internal motivation within the scope of the "Attitude" theme. Although these competencies are being developed through the social studies teacher training program [82], social studies teacher competencies framework [14], and general competencies for teaching profession [13], it is believed that the failure of experts and teachers to achieve stability may be due to the difficulty of predicting the change that the social studies teaching process will undergo in 2050. Furthermore, it is thought that deficiencies in the acquisition and monitoring of these competencies may have created a barrier for the experts and teachers to reach stability. Another reason for experts' and teachers' failure to achieve stability could be their disparate understandings of what all of these competencies imply.

As a result of the e-Delphi rounds, the following implications are made for future research and practice in light of the results obtained:

This research involved 16 academicians from various social studies disciplines and two social studies teachers. The relatively small number of social studies teachers in this research can be viewed as a limitation. It is possible to replicate it with a larger group of social studies teachers.

A scale development and validation research can be conducted including the competencies determined within the scope of this research, and data can be collected from larger samples with the scale developed. The competencies of social studies teachers can be investigated in terms of different variables.

According to the results of this research, the social studies teacher training program and the social studies curriculum can be updated. Courses such as open and distance learning, inclusive education, adult education and lifelong learning, human relations and communication, media literacy, information technologies in social studies, etc. [82], which are believed to be important in 2050, can be included as compulsory courses. In the Social Studies Teacher Training Program, the weight of the practical courses can be increased so that pre-service teachers can configure the knowledge and skills they have acquired during their undergraduate education.

Distance education applications, which are believed to be effective in the future, can be transformed into educational environments where teachers can improve their competencies. In-service training can be given to teachers with distance education tools. It is believed that giving these trainings at certain intervals during the process will be more effective.

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