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Article

Teaching social studies with mind and intelligence games: A study of teacher candidates' views and experience

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Keywords: Mind and intelligence games, teaching social studies, teacher candidates, experience, opinions

- The mind and intelligence games can be used as an effective instrument for teaching some skills included in the social studies curriculum such as historical empathy, thinking, problem solving and decision-making skills.
- Teacher candidates were both excited and concerned about using mind and intelligence games for social studies education.
- To increase the professional self-confidence of social studies teachers, in-service teacher training can be enriched with workshop activities on mind game training and practices.

Purpose: The study aims at analyzing teacher candidates' experience and views about the use of mind and intelligence games in social studies courses.

Design/methodology/approach: The basic qualitative design was used in this paper. Data were obtained during the 2016-2017 academic year from 12 4th year college students studying social studies teacher education in a university located in Turkey. A two-week (16 hours) workshop program on 21 different mind and intelligence games of different genres was given to the teacher candidates. Dataset were analyzed regarding the usability of mind and intelligence games in social studies education.

Findings: The obtained results showed that although mind and intelligence games offer important contributions to teaching social studies, there may be some difficulties.

Practical implications: University administrators may organise in-service training programs for instructors on mind and intelligence games as implementing them in courses may increase learner satisfaction and contribute to a more positive classroom environment.

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1 INTRODUCTION

Social studies, which tries to convey the content of social science disciplines to the students through an interdisciplinary approach and an integrative perspective, has continued its existence in education processes for more than a century. At present, as in the past, social studies aim to provide individuals with social understanding (knowledge of human societies) and citizenship competencies (democratic citizenship) (Parker, 2015, p.4). Social studies, which undertakes to realize citizenship education (Parker, 1996), which is one of the most important goals of education on a global scale, has been affected by the changes in the world on a local and global scale and has become a field of struggle between interest groups (Evans, 2004, p. 176).

As a matter of fact, after the second half of the 20th century, the citizenship competencies expected from individuals on a global scale have changed in line with the developments in computer and internet technologies and the goals of becoming an information society. Considering these changes, today individuals are expected to have a wide range of skills and competencies, which are also called 21st century skills (ISTE, 2007; Partnership for 21st Century Skills, 2009). These skills generally place emphasis on what students can do with information, what they learn in authentic contexts, and how they use the information. In conclusion, these skills emphasize skills such as effective communication and collaboration, problem solving, creative and innovative thinking, and expertise in using technology (Larson & Miller, 2011). Despite being seen as basically "new", these skills and competencies have a very old background that can be traced back to Socrates and the sophists. The ideas of the educational philosopher Dewey, who proposes an experiential education in which the student interacts with a constantly changing world and defines the educated person as "thinking before acting, producing intelligent answers in the face of a problematic situation, evaluating the consequences of a chosen action" can be cited as an example. In fact, this statement by Dewey also defines the 21st century learner (Johnson & Reed, 2008, p. 13). These skills and competencies, which are defined for 21st century learners, cannot be gained through traditional social studies education, in which students are passive listeners and teacher-centered and unrelated to real life content is tried to be taught. In this context, social studies educators suggested that new teaching approaches should be applied. Due to its ability to attract attention of the students, the use of games in educational processes is one of the methods emphasized by the researchers (Watson, 2010).

Games are an important part of children's cognitive, physical, social, and emotional development (Ginsburg, 2007), and have been used for educational purposes since ancient times (Demsey, Lucassen, Haynes & Casey, 1996; Aldrich, 2009). Although games traditionally used for entertainment or fun, today, games are considered as new tools for education and training (Oblinger, 2004), supportive of learning (Griffths, 2002; De Freitas & Griffiths, 2008), and used as important tools for different learning environments (Richards, Stebbins & Moellering, 2013). Compared to the classroom, games are differentiated learning environments that are empowering, motivating, challenging,

individualized, valuing each child's efforts, and having established rules. Educational games are powerful teaching options that can be used not only to engage students, but also to encourage critical thinking, positioning, and problem solving. Freeing learners from the tedium of traditional learning, games offer students a tool to engage in real representations of real-world dilemmas and challenges, make choices, explore options, take on roles, and move away from passive learning. Moreover, through playing games, students can explore different perspectives by taking on different roles. They also learn to recognize and understand important conceptual connections by confronting new and related problems. (Watson, 2010). Educational games are gaining more and more support in schools as a new teaching method, and the opportunities offered by these games also meet the needs of citizenship education (Vogler & Virtue, 2007). One of the games used for educational purposes and accepted as an important supporter of learning is intelligence games.

Mind and intelligence games are considered supportive of learning, and they are important elements of the learning games. It is widely accepted in the literature that mind and intelligence games improve critical thinking skills (Bottino & Ott 2006; Ott & Pozzi, 2012) and academic success (Bottino, Ott, & Tavella, 2013a, 2013b). These games require the use of a variety of strategies, problem-solving skills, and logical-thinking skills (Muller & Pearlmutter, 1985; Alessi & Trollip, 2001), and referred to as brain exercises and improve cognitive functions (Ott & Pozzi, 2012). Accordingly, it can be argued that mind and intelligence games improve some thinking skills such as reasoning and logical inference (Kiili, 2007; Mc Farlane, Sparrowhawk & Heald, 2002; Bottino, Ferlino, Ott, & Tavella 2007; Rohde & Thompson 2007). Intelligence games, which are defined as the gamification of all kinds of problems including real life problems (Ministry of National Education, here and after MoNE, 2013), and which have different types, provide students with high-level thinking, logical reasoning, strategic thinking, problem solving, critical thinking, creativity, and entrepreneurship skills, and increase their academic success thanks to rich game materials and original structures. (Adalar, 2021a; Alkan & Mertol, 2017; Baki, 2018; Baş, Kuzu & Gök, 2020; Bottino & Ott, 2006; Bottino et al., 2007; Bottino et al., 2013a; Demirel, 2015; Devecioğlu & Karadağ, 2014; Kula, 2020; Kurbal, 2015; Ott & Pozzi, 2012; Savaş, 2019). In the general framework, intelligence games are called as a set of activities carried out to enable the individuals to have fun, to recognize their own talents, to produce correct and effective solutions to problems, and to renew themselves (Şeb, Bulut Serin, 2017).

Turkey’s Board of Education also draws attention to such benefits of mind and intelligence games. According to the Elective Mind Games Course (EMGC) prepared in 2013, intelligence games are taught in schools as an elective course. In this program, mind and intelligence games are classified as reasoning and algebra games, memory games, verbal games, strategy games, geometric mechanics games, and intelligence questions. In the same plan, the aim and purpose of the mind games course are defined as: The aim of the mind games course is to assist students to recognize and develop their mind potential,

to develop different and original problem-solving strategies, to make fast and correct decisions, to develop a systematic mindset, to develop the ability to work as individual and a team member, and promote competitive working skills based on mind and intelligence games, and development of a positive attitude. EMGC will help students to develop their capacity to perceive and evaluate problems, to create different perspectives, to produce quick and correct decisions for problems, to develop a habit of focusing on a subject and a solution, and to improve their ability to use reasoning and logic effectively (MoNE, 2013; p. 1). From this point of view, it can be predicted that intelligence games will make important contributions to students in gaining skills such as problem solving, self-assessment, reasoning, making quick and effective decisions, working individually and collaboratively, expressing their thoughts effectively and developing self-confidence. In addition, it can be said that these games, which have different types, also appeal to the individual differences of students, such as different types of intelligence such as verbal, visual, spatial, and mathematical intelligence, and learning styles.

The new 2018 social studies curriculum, which prepared consistent with the Turkey Qualifications Framework (TQF) and European Qualifications Framework (EQF) includes a variety of skills such as communication in the mother tongue, mathematical competence, basic science & technology competencies, taking initiative, and entrepreneurship awareness. These qualifications will enable students to possess the most sufficient vocabulary knowledge and to use it effectively, to take risks, to develop and use mathematical thinking, creative-thinking, and innovative-thinking skills. Moreover, social competence skills include developing students' positive communication skills, showing tolerance, expressing, understanding and empathizing with different perspectives. To demonstrate these abilities, individuals must be able to cope with stress and frustration as well as distinguish between personal and professional aspects. It was highlighted that for helping students to develop these skills, teachers should apply different methods, strategies, and techniques in educational classroom activities (MoNE, 2018). The Ministry of National Education has put an emphasis on achievements that will be gained as a result of games. These achievements are as follows: “The learner compares traditional children's games with modern games in terms of change and continuity”, “The learner compares the cultural elements of our country with the cultural elements of different countries (which means visual and written communication tools and cultural elements such as clothes, food, games, family relations are emphasized)” at the 4th grade regarding the theme of culture and heritage learning: “As an individual who is aware of his/her rights, he/she acts in accordance with the duties and responsibilities required by the roles he/she takes in the groups and he/she participates in (which means the importance of considering the situations of playing games, studying, reading, sleeping, spending quality time with family and friends, and using mass media while planning personal time is mentioned)” at the 5th grade. The theme of individual and society learning: is emphasized at the 7th grade in the following way “The learner analyzes the changes brought about by digital technologies in production, distribution, and consumption networks (e-commerce (virtual/digital

products such as computer games as well as real products)" in the theme of production, distribution, and consumption learning field (MoNE, 2018). In the light of this information, the use of games in social studies education is important for the development of students. In addition, it can be said that the use of intelligence games, which is one of the educational games in terms of suitability for skill education and appealing to individual differences, within the scope of social studies education will make significant contributions.

A literature survey revealed that various types of digital or non-digital mind and intelligence games are used for different purposes in previous studies. These studies can be classified into three groups as follows:

- *Studies that examine the elective mind games course from different dimensions* (Adalar & Yüksel, 2017; Devecioğlu & Karadağ, 2014; Sadıkoğlu 2017; Ulusoy, Saygı & Umay, 2017),
- *Studies that examine participants' levels and changes in problem-solving, attention and visual perception, strategy development, academic success and reasoning skills through intelligence games.* (Altun, 2017; Bottino & Ott, 2006; Bottino et al., 2007; Bottino et al., 2013a, 2013b; Kurbal, 2015; Marangoz, 2018)
- *Studies that integrate mind and intelligence games into different lessons (mathematics-Turkish-science-social studies) as a learning and teaching tool.* (Çağır & Oruç, 2020; Demirel, 2015, Demirel & Karakuş Yılmaz, 2019; Erdoğan, Çevirgen & Atasay, 2017; Marshall, 2004; Adalar, 2021b, 2021c).

As the literature survey revealed, only a limited number of studies examined the use of mind and intelligence games in social studies education.

As can be understood from the literature review, the number of studies examining mind games in the context of social studies education is quite limited. Despite the existing support for the use of games in social studies education, which make positive contributions to the achievement of learning and teaching goals, the scarcity of studies on the use of games with significant potential such as intelligence games is an important shortcoming.

Social studies programs teach students to acquire, organize, interpret, and communicate information. Students use this knowledge to draw logical conclusions, solve problems, make decisions, and interact with others. In social studies, where an education based on reading and comprehension skills is carried out, which is mainly based on the text (Bermudez, 2015; McHenry, 2014), the continuous teaching of the lessons with the same teaching style prevents an effective social studies education and negatively affects student success (Schug, Todd & Beery, 1982; Siler, 1997). In addition, the current examination systems, and the intensity of the course content push social studies teachers from the recommended student-centered approaches to traditional teacher-centered teaching approaches (Vogler & Virtue, 2007). Social studies educators have important duties for students to successfully acquire the necessary knowledge, skills and values to become effective citizens (Frye, Trathen & Koppenhaven, 2010). Teachers need to reflect

on ways to include educational games in their social studies curriculum to help their students learn to be active citizens, reflect on their roles in society, and realize their individual responsibilities (Watson, 2010). Teachers unfamiliar with the game may be apprehensive about using it in the classroom. For games to be effectively integrated into classrooms, educators need to know these games very well and relate them to the content in accordance with the curriculum (López & Cáceres, 2010). Despite increasing recommendations for the use of educational games, guidelines on how to implement these games in educational programs and classrooms are lacking. There are not enough studies. In the studies on educational games, it has been emphasized that learning through games in schools will not be effective without additional teaching support and sound implementation strategies. (Leemkuil, de Jong, de Hoog, & Christopher, 2003; O'Neil, Wainess, & Baker, 2005; Wolfe, 1997). For this reason, there is a need for additional research on the use of educational games such as intelligence games in schools.

For integrating a game into teaching-learning environments partners have a critical role (Wilson, 2009). Partners are primarily responsible for effectively implementing a material/activity during a teaching-learning process. Therefore, partners' views on how to integrate a material/activity into a teaching-learning process are important. Accordingly, as prospective social studies educators, teacher candidates' perceptions about mind and intelligence games and how to integrate them into social studies teaching are important. In this context, the views of pre-service teachers, who will be social studies educators of the future, on how they perceive intelligence games and how these games can be used in the education process are considered important.

The current paper aims at examining social studies teacher candidates' views on using mind and intelligence games in social studies education. For this purpose, answers to the following questions were sought.

1. What are the views and experience of the participants regarding the processes of associating intelligence games with social studies teaching?
2. What are the views and experience of the participants regarding the use of intelligence games in social studies learning-teaching processes?

2 METHODS

2.1 Research design

In our study, we applied to basic qualitative research, which is one of the qualitative research designs that is frequently preferred in the field of education. Basic qualitative research is a preferred qualitative research design to present individuals' views on an event and phenomenon in an interpretative way and to determine what meaning they add to their experience (Merriam & Tisdell, 2016, p. 24). Qualitative research is particularly appropriate for in-depth explorations of complex processes, mapping out novel areas of interest and accounting for contextual realities and perceptions. (Patton, 2015; Creswell,

2007). The primary purpose of the basic qualitative research design is to reveal and interpret these meanings (Merriam & Tisdell, 2016). This design was preferred to determine what meanings social studies teacher candidates attribute to their experience on mind/intelligence games and their thoughts on the use of these games in social studies teaching. In this context, teacher candidates were allowed to learn mind and intelligence games, get familiar with its rules and characteristics and play these games one-on-one or as a group for two weeks (16 hours). Following this training/activities, participants' experience and views were analyzed regarding the usability of mind and intelligence games in social studies education. This process was recorded by the authors using observation forms, and accordingly, teacher candidates' views on mind and intelligence games were determined using structured surveys prepared by the authors. The teacher candidates' views on whether mind and intelligence games can be used in social studies education were obtained with focus group interviews conducted after the workshop activities.

2.2 Participants

Data were obtained from 12 4th year college students studying social studies teacher education in a university located in Turkey during the 2016-2017 academic year. Considering the purpose and the topic of the study, participants who have more knowledge/experience in teaching social studies compared to others and who volunteered for the study were selected. Accordingly, a criterion sampling method was used (Patton, 2002). A total of 12 students (5 male, 7 female) participated in the study. The confidentiality was maintained by nondisclosure of participants' identities and different coded-names were used for each participant. This manuscript does not contain any individual persons or human data.

2.3 Procedure

The subject of this study is the use of mind and intelligence games in teaching social studies. A literature survey revealed that there is a lack of relevant studies. This factor was considered as an important limitation for a study aiming at analyzing views. The degree program for social studies teacher education does not include any course (elective/compulsory) about mind and intelligence games. Therefore, it is not likely to expect our participants to have any knowledge/experience in mind and intelligence games. This situation may cause some negative consequences such as researchers and participants can differentiate the meanings and attributions of mind and intelligence games. (Sayer, 2016). Therefore, providing teacher candidates with knowledge and experience in mind and intelligence games was considered important for this study. Accordingly, a 16-hour training program was prepared to allow teacher candidates to learn the rules and characteristics of mind and intelligence games and play these games

one-on-one or as a group. Information about the 16-hour training program is given in Table 1.

Table 1: Information About The 16-Hour Training Program

Sessions	Subject/Implementation	Mind and intelligence games	Duration
Session 1	Introducing and implementing verbal, strategy, and mind questions	Anagram, word finder, word hunt, word arrangement, mangala, corridor, kulami, nim, trax, wolf-sheep-cabbage, 3 bulb-3 switches, etc. and rebus	4 hours
Session 2	Playing games one-on-one or as a group		2 hours
Session 3	Introducing and implementing geometric-mechanical, memory, and reasoning-algebra games	Apartments, connect abc, battleship, city-country placement, how smart are you? q-bitz, tick tock boom, and look-look.	4 hours
Session 4	Playing games one-on-one or as a group		2 hours
Session 5	After providing a relevant training and first-hand experience, playing games as one-on-one or as a group through a set-up prepared by the authors. (All stages of this process were organized and observed by the authors.)	Anagram, word finder, word hunt, word arrangement (verbal games), mangala, corridor, kulami, nim, trax (strategy games), apartments, connect abc, battleship, city-country placement (reasoning and algebra games), how smart are you?, q-bitz, (geometry-mechanic games), tick tock boom, look-look (memory games), wolf-sheep-cabbage, 3 bulb-3 switches, etc. and rebus (mind and intelligent questions)	4 hours

During this process, the mind and intelligence games were roughly introduced to the participants through presentations. In these presentations, the points that distinguish the game genres from each other were also provided. The games included in each game genre, their features, materials, and rules were explained. Following the presentations, a convenient environment was established to experience these games. The two-three games of each game genre were played by with participants. Thus, the participants experienced the games firsthand (as individual and group) and this theoretical training was reinforced with immediate feedback and error corrections. A total of 21 games: Anagram, word finder, word hunt, word arrangement (verbal games), mangala, corridor, kulami, nim, trax (strategy games), apartments, connect abc, battleship, city-country placement (reasoning and algebra games), how smart are you?, q-bitz, (geometry-mechanic games), tick tock boom, look-look (memory games), wolf-sheep-cabbage, 3 bulb-3 switches, etc. and rebus (mind games) were included in this process. Although they were calm and silent

during the presentations, the teacher candidates' excited, entertaining and even competitive and angry attitudes drew the attention of the authors during the game-playing activity.

This mind and intelligence games process was carried out as a workshop. Within the scope of the training and practice program, in the first four sessions, a theoretical training was given, and in the 5th and last session, a comprehensive and competitive practice and experimentation program covering all games was implemented and the process was completed. The introduction of the games and the workshop were conducted by the first author of this paper since he previously participated in a in-service training on mind and intelligence games given to teachers by the Ministry of National Education (MoNE) as a specialist educator. The 16-hour training that was explained above was implemented in a classroom which has 35-person capacity in the education faculty building of the university. This classroom had a presentation device, a computer, and desks and chairs that can be arranged for individual and group work.

2.4 Procedure collection and analysis of data

Data were collected using surveys, observations, and focus group discussion methodology. While the presentations and implementations for mind and intelligence games were conducted by the first author, who is an expert in training such games, at the same time, the game experience of the participants were simultaneously recorded through observation forms by the other two authors in the classroom as independent observers. Instead of obtaining numerical data, observations were used in qualitative research to make in-dept and in-detail explanations and definitions for an event, phenomenon, and situation that investigated in a study (Yıldırım & Şimşek, 2018, p. 200). The process was observed and reported through observation forms in a pre-prepared workshop environment with mind and intelligence games by the two authors avoiding to interfere with the teacher candidates' game experience.

The participants' individual evaluations regarding the games were determined by structured surveys prepared by the authors. The participants were asked to evaluate each game by marking from 0 to 10 according to the criteria: "fun/not fun, suitable/not suitable by time-cost, and useful/not useful for social studies education". Data obtained from the survey was published in a previous study (Ekiçi, Öztürk & Adalar, 2017). Therefore, the findings obtained only from qualitative data were presented in the current paper.

The most important dimension of the study, the teacher candidates' views on the usability of mind and intelligence games in teaching social studies were obtained through focus group interviews. According to Lune and Berg (2017), interviewing is an efficient method to understand participants' perspectives or to learn how participants interpret facts or events. The focus group discussion method was preferred to directly present the views regarding the usability of mind and intelligence games in teaching social studies. The data of the study were obtained through a structured interview form including

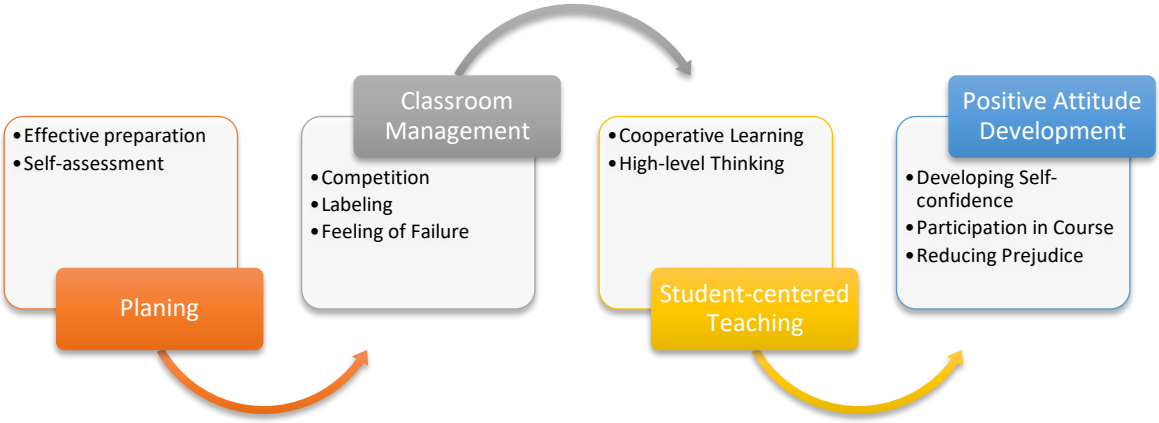
supplemental questions slightly different according to game genres. Structured interview forms are data collection tools used to identify similarities and differences between the answers given by the interviewees and to make comparisons. (Brannigan, 1985, as cited in Yıldırım and Şimşek, 2018, p. 130). Two separate focus group interviews were conducted with the teacher candidates. Since all participants of the study could not join the focus group interviews, the same interview questions were asked to different participants in the second focus group interview. Each discussion session took roughly 65 minutes.

Data obtained from focus group interviews and surveys were transferred to computer files. The transcriptions of the audio records were made and the texts were provided to all authors. Analysis of qualitative data was conducted in two stages. First, the authors examined all data individually, coded all lines, and identified the themes. An inductive analysis was conducted at this stage. Second, the authors came together and compared the individual analyzes they created within the framework of descriptive analysis and finalized the analysis. Data obtained from surveys combined and frequencies and percentages were analyzed. To analyze observation forms, in accordance with the descriptive analysis procedures, the observational data were associated with the themes and codes obtained through the analysis of the focus group interviews.

3 FINDINGS

Examining the practical opinions of pre-service social studies teachers who participated in a workshop developed for the use of intelligence games and also attended the teaching practice course, this research reached certain findings. According to pre-service teachers, intelligence games, when carefully planned, are an effective instrument with the potential to transform social studies teaching. The 4 sub-themes explaining this main finding can be listed as planning, classroom management, student-centered teaching, and positive attitude development. According to the participants, intelligence games require effective preparation. Professional training and self-assessment are necessary to plan the course well. In the next step, a good implementation of classroom management is required. Participants also state that intelligence games can change the classroom environment in certain aspects. According to this opinion, it is emphasized that games can create competition among students, lead to a feeling of failure, and this can cause labeling against each other. Considering these requirements, intelligence games can improve social studies teaching. Participants recommend that intelligence games could provide a student-centered and productive social study teaching. Intelligence games suitable for the student-centered approach can improve creativity and other high-level thinking skills of the students. Considering all these, intelligence games will make significant contributions to both the teacher and the student. Participants reveal that teachers and students develop positive attitudes towards the course, game, themselves, and other students through the use of intelligence games. Self-confidence and unprejudiced attitudes are observed among the prominent positive attitudes.

Figure 1. Overview of findings



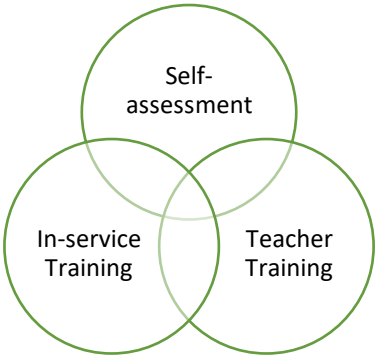
3.1 Planning

Participants emphasize that there may be some difficulties for teachers in the use of intelligence games in social studies teaching. These are the difficulties in planning the lesson, the necessity of a professional training in terms of the implementation of such games, the difficulties in associating the content of the lesson with the intelligence games, and the difficulties in choosing the right and useful intelligence game. Some of the related statements were as follows:

Hale: “That's exactly what I was going to say (leveling games from simple to hard). It's easy to think about if I can prepare it, and it's easy to adapt, but as you said, when we can't adjust this level, it may cause a feeling of failure in the child, a feeling that I couldn't do it. So, we should be careful.”

Orcun: “Meanwhile, the teacher has a great responsibility. After all, s/he will prepare this game herself/himself. In this sense, it may be difficult to prepare the concepts by bringing them together.”

Figure 2. Sub-Dimensions related to the theme of planning



The participants, who have increased their knowledge and experience on intelligence games through workshops, emphasize that they experienced the self-assessment process when they started to generate ideas about using these games in social studies teaching. The participants point out that they can recognize their own strengths and weaknesses in terms of getting to know themselves better in the professional sense and applying these games in social studies course as a method or teaching instrument. The participants consider this situation as an opportunity for individual awareness and professional development for the teacher. Some of the related statements were as follows:

Buse: Games contribute to the teacher not only in recognizing self-knowledge but also in recognizing the students. And I think that is an important thing for a teacher.

Orcun: For instance, we have seen verbal aspect in teaching concepts. Today, it is very useful for us in teaching concepts. You know, I even learned it myself, that is, we learned the meanings of the words in the first activity we did while finding the words of our friends. I think I realized that it was useful. Since I realized this, I thought it would be effective for our students.

An important factor affecting the planning is the professional training of teachers and pre-service teachers about intelligence games. Emphasizing that the current teachers and pre-service teachers do not receive sufficient pre-service or in-service training on the use of intelligence games, which can be considered relatively new for the field of social studies , they state that they lack the necessary pedagogical knowledge and experience. Therefore, the participants also emphasize that the teachers may have difficulties in establishing the relationship between the content of the course and intelligence games. Intelligence games can be prepared/played for different age groups according to levels such as ease and difficulty. Some of the related statements were as follows:

Cenk: It is not easy to associate these games with achievements. I think it is necessary to change these games quite a bit. In order to adapt these at school, we need to receive a professional training.

Alp: None of us was trained on this.

Self-assessment and professional training are emphasized by the participants. However, the curriculum should be suitable for this to use intelligence games effectively in social studies teaching. Participants mention that the curriculum of social studies teaching is not fully suitable for intelligence games. It is pointed out that the inclusion of intelligence games in this program is seen as a difficult problem to be overcome by the participants due to the intensity of the acquisitions in the curriculum of social studies course. The participants also emphasize that the possible anxiety that the teacher may experience in terms of completing the current achievements during the year may have a negative effect on applying the intelligence games that require extra time and effort. In addition, drawing attention to the pressure that the high school entrance exams held at the end of the 8^{th} grade can create on both students and parents, the participants state that this situation may negatively affect the importance attributed to the intelligence games. Research findings also indicate that associating some types of intelligence games with

social studies subjects may cause some significant difficulties. Some of the related statements were as follows:

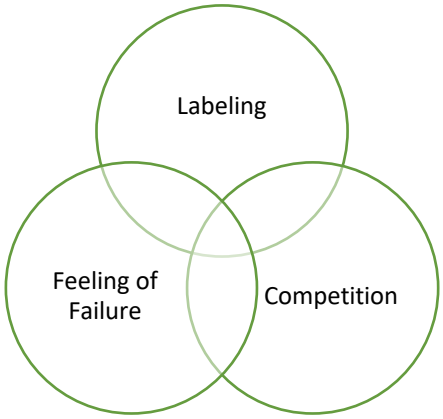
Elcin: You know, teachers should be given their due. We have a race-oriented training system. There is transition exam from primary to secondary education (TEOG). The students are required to participate in this exam. That is why I do not find it unfair for the teachers to say that the students take a test again and again.

Dilek: In general, I will also make a criticism. There are so many achievements in our program, and we have very little time to teach them. And in such an environment, I think that the time to be allocated for the games will not be enough.

3.2 Classroom management

According to the participants, teachers who aim to integrate intelligence games into the lesson should think carefully about classroom management. Based on their teaching practice experience, the participants explain this difficulty expressed for the teacher through such dimensions as the large number of classrooms in Turkey, the fact that the students do not have sufficient knowledge and experience in intelligence games, and the need to take individual differences into account.

Figure 3. Sub-Dimensions related to the theme of classroom management



One of the factors that are effective in drawing attention to classroom management is related to group dynamics. It is thought that intelligence games may cause some difficulties that disrupt group dynamics. The first finding in this category is discussed under the sub-theme of “inclusion of competition”. The pre-service teachers who have participated in the workshops state that bringing intelligence games to the classroom environment, with the influence of their own experience, could create an environment of competition, but it is very important that this competition develops in a positive way. According to this, it is understood that they think that the competition that may occur in the classroom environment can have positive contributions to the students when it develops as group competition and/or competition based on rewards. On the other hand, it is also found that the participants have some concerns about the fact that the competition that may occur with the use of intelligence games in the classroom

environment may not be well managed by the teacher and that there may sometimes be an uncontrollable competitive environment. Particularly, the participants think that individual competition or competition based on grades can cause a negative competitive atmosphere that can cause ambition (negatively) and conflict in the classroom. It can be stated that this situation may cause difficulties for students, especially in terms of the group (interactive). Some of the related statements were as follows:

Mert: I thought, is the creation of a competitive environment in the classroom a positive thing? Since there will be those who succeed, there will be those who fail, will it be a problem for the bonds between them?

Dilek: But competition is good in a certain way, but harmful in a certain way. In other words, competition brings ambition, increases the determination to work, and too much competition harms herself/himself because s/he is not satisfied with herself/himself.

Nalan: However, a problem may arise: As there is an element of competition in the game, whichever group we include the inclusive student in, that group will see this student as a burden and a weakening party, which may cause that student to get harm even more.

Another sub-theme disrupting the group dynamic is “labeling”. Participants draw attention to the fact that inclusive students, who are in the group and are thought to contribute less to the group than other students, may be labeled as unsuccessful or incapable and excluded from the group. Therefore, it can be stated that there is a concern that the use of intelligence games in social studies teaching may cause difficulties at the group level (interactive), especially for inclusive students. The participants emphasize that the communication of teacher with the inclusive student and the teacher attitude towards the inclusive student are very important in dealing with such a possible problem. According to the participants, if the teacher of the course does not see such students as different from other students from the very beginning and gives these students the opportunity to ask or answer questions at every opportunity and tries to involve them in the lesson, the formation of such separation/exclusion problem can also be prevented. Some of the related statements were as follows:

Mert: I think that because our students think more concretely and the name of the course is intelligence games, there will be students who fail in the class. How will we give feedback to students who fail? Her/His friends might make fun of her/him for example.

Buse: What happens if a child constantly loses in every course? Somehow s/he can't succeed it. From now on, that child will come to your lesson with a negative perception that the teacher will play games in the course again and will be alienated from the course.

Hale: On the other hand, the participants emphasize that teachers may find it difficult to choose the correct/useful game in line with the student's grade/age level or the objectives of the course. Particularly, the participants draw attention to the selection of correct and useful games that will not create a possible feeling of failure on students or lead to uncontrolled competition in the classroom during the implementation of the course.

It is easy to think about if I can prepare it, and it is easy to adapt, but as you said, when we cannot adjust the appropriate levels for the students, the child may feel a sense of failure and may think "I cannot do it". So, we should be careful.

Alp: I think there is a game that every student can play. We do not always play the same game. There will definitely be a game where s/he will have the opportunity to win.

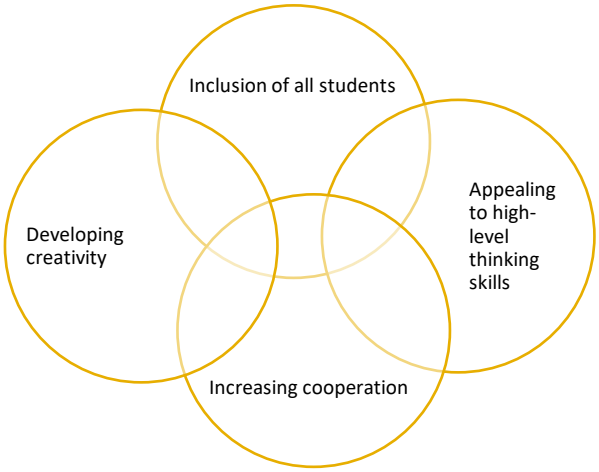
Buse: Here comes the need for the teacher to know the class well.

3.3 Student-centered teaching

Participants argue that intelligence games have the potential to transform social studies teaching in terms of philosophy, method, and technique. Participants also evaluate the use of intelligence games in social studies teaching not only as an activity, but as an update of the teaching approach. Accordingly, intelligence games can be an instrument to reinforce student-centered teaching. According to the participants, intelligence games provide important contributions in encouraging all students to participate in the course and increasing cooperation between students. As a result of these studies, the participants think that high-level thinking skills of students and especially their creativity will develop.

It is expressed by the participants that the use of intelligence games in the teaching process can have positive effects on different students (for example, inclusive students). Therefore, it can be said that it is believed that the participation of inclusive students in such group activities will contribute to their socialization and acceptance by all students.

Figure 4. Sub-Dimensions related to the theme of student-centered teaching



Moreover, it is concluded that these games are thought to contribute to the formation of a cooperative learning environment in the classroom, and thus a lesson process in which students can participate more actively. The participants point out that a teacher who includes intelligence games in her/his lesson can create a cooperative learning environment and obtain a lesson environment in which peer learning develops if s/he can manage the phenomenon of competition that may occur well. Another remarkable point in the research findings is that these games can contribute to the socialization of students.

The participants draw attention to the existence of examples of intelligence games that can be played in the virtual environment and state that intelligence games can easily be substituted for harmful online games that may cause students to become asocial. Some of the related statements were as follows:

Hale: You know, we asked the children for something like this. I think we can use it in cooperative learning.

Alp: Competition here can be made not only individually, but also by dividing into groups. At the same time, cooperation within the group and what we call peer learning, which a successful student will bring to an unsuccessful student, can also take place.

One of the important findings is that the use of intelligence games in social studies course can contribute to the development of high-level thinking skills in students. According to this, it is understood that the ability of students to look at the events they encounter in their daily lives and historical events from a different perspective and to think multi-dimensionally can be developed in a course in which games of different types and appealing to different intelligence areas are handled through a student-centered approach. It has been stated that the fact that such games require multi-dimensional thinking in terms of their rules and characteristics can contribute to the multi-dimensional thinking of the students who experience these games in different situations and conditions. Some of the related statements were as follows:

Cenk: While we adapt this game to the subject of World War I, we can ask students to make their own deductions, as in the synthesis step. In this case, for example, we can look for answers to such questions “If World War 1 had not happened, what would have happened?”. Will the child be able to see where her/his moves can take her/him in the course of the war? For example, what would have happened if you had not made that move? How did the course of the war change with the decisions taken in the World War 1? Playing this game, the student will be able to notice different aspects of the event.

Integrating intelligence games in a student-centered way in social studies teaching can also reinforce creativity of the students. Based on the experience they gained from the workshops, the participants have discovered that most intelligence games can be easily redesigned with different materials without the need for purchase. In this context, they draw attention to the fact that a kind of “do-it-yourself activities”, where games can be redesigned with much less cost and different designs can be put forward, can be easily implemented in or out of school. According to them, such activities can significantly help the development of creativity of the students. Some of the related statements were as follows:

Elcin: We can help develop their creativity. For example, even if they put a few beads or pebbles in a plastic bottle, “tik tak boom” can be played.

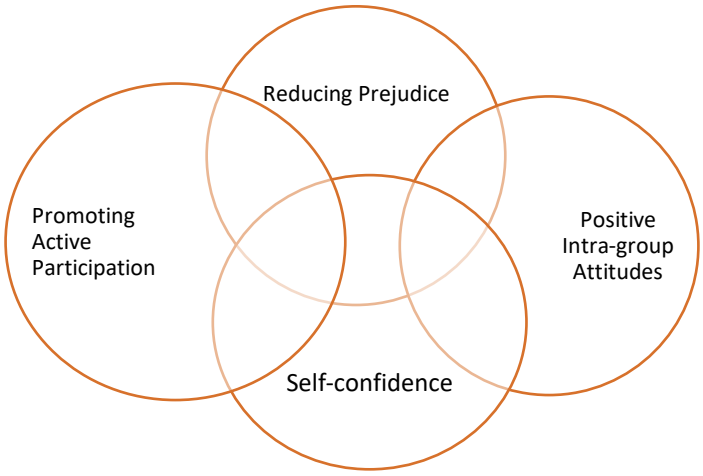
3.5 Positive attitude development

According to the participants, the use of intelligence games is effective in reducing prejudices. Both students and teachers may have developed prejudices against intelligence games. However, the participants emphasize that when they have increased their knowledge and experience, they have gotten rid of their existing prejudices about intelligence games and have developed a positive attitude over time. Participants draw attention to the fact that gaining knowledge and experience about intelligence games is an important factor in breaking their personal prejudices against intelligence games before the workshops. Some of the related statements were as follows:

Buse: Before I attended this course (workshop), I thought that only people with numerical intelligence could play intelligence games. I thought that those in the verbal field did not have much skill in this field. And I didn't know it was sized that way either. I didn't know about the game types. I have learned this. In a way, my prejudice has been broken.

Mert: For example, when I was little, I used to solve word hunts in crosswords. My mother used to say “They are easy, you solve those numbers”. There is something left from childhood. I did not see puzzles as a game of intelligence. My mother used to say “What are you going to do, solve the numeric ones, it is simple”.

Figure 5. Sub-dimensions related to the theme of positive attitude development



According to the participants, breaking prejudices against intelligence games will bring self-confidence. Experience with intelligence games will develop positive attitudes of teachers towards using intelligence games in social studies teaching. In addition, the participants argue that the experience of intelligence games will also contribute to the development of self-confidence of the students. The participants draw attention to the importance of intelligence games in breaking the prejudices that may exist in students, both about these kinds of games and their individual competencies. They point out that the self-confidence of students who gain experience and get rid of their prejudices by

learning and playing games can also improve significantly. Some of the related statements were as follows:

> Dilek: The word hunt game was too complicated for me. I thought whoever did this has original idea. But it was not such an original idea, and it was simple. I thought I could create one too. In this sense, self-confidence occured.

> Mert: I think these games will be very effective in breaking prejudices of children about these issues. Even we experienced this feeling while playing. I think that intelligence games can give every child self-confidence that they can achieve something.

In addition to their contribution to reducing prejudice and increasing self-confidence, the participants mention that intelligence games encourage the development of positive attitudes towards the course. If assessment is not made through grades, intelligence games can also contribute to breaking negative perceptions of students about exams and reducing exam stress. For example, they state that exams can be prepared easily by using verbal games such as anagrams and thus can be transformed into an entertaining form like a game. The participants also emphasize that the inclusion of intelligence games in social studies course can also have a positive effect on student attitudes, and in such a case, students may like both their teachers and social studies course more. Some of the related statements were as follows:

> Burçin: But if we do an activity as a group, if we teach the course by adding games to the course, and when we do an activity as a group, we will ensure that they (inclusive students) participate in the course and become more socialized with other students.

> Hale: For example, how can we gather the attention of children? At that moment, we say that we can have brainstorming or something. I think such an intelligence game can be presented on the subject at that time.

According to the participants, the use of intelligence games in social studies education can have a positive effect on attitudes of students towards their classmates. The use of games can create or strengthen group dynamics. When examined in terms of their features and rules, most intelligence games can be designed to be played with groups in the classroom environment. Participants emphasize that the inclusion of intelligence games in social studies course can increase group solidarity and contribute to the formation of strong relationships and communication among peers. Some of the related statements were as follows:

> Burcin: For example, you can be in a group with someone you are angry with. But at that moment, you forget your resentment in that game, you start talking again, you start sharing things again.

Alp: At the same time, cooperation within the group and what we call peer learning, which a successful student will bring to an unsuccessful student, can also take place.

4 DISCUSSION AND CONCLUSIONS

Mind and intelligence games emerge as an important field since these games are widely used in teaching and education practices nowadays and discussed in academic studies. It should be accepted that using mind and intelligence games in educational environments requires a certain level of experience and readiness (Demirel, 2015). Because these games have difficult contents and rules and therefore, appeal to different types of intelligence and skills. Since 2013, mind and intelligence games are provided as an elective course at secondary schools in Turkey (MoNE, 2013). Apparently, the expertise needed by teachers of this elective course was provided by in-service and private training (URL-1, 2020; URL-2, 2020; URL-3, 2020). The main problem discussed in this study is the integration of these games which also discussed in recent studies (Adalar & Yılmaz, 2017; Ulusoy et al., 2017; Zirawaga, Olusanya & Maduku, 2017; Sadıkoğlu, 2017; Savaş, 2019), into courses such as social studies, science, Turkish, and mathematics. In the present paper, this problem was addressed particularly to social studies course using a qualitative approach. Our findings revealed that while important contributions of mind and intelligence games to social studies education, but there are also some difficulties. The results obtained in this study showed that the teacher candidates were both excited and concerned about using mind and intelligence games. As a result of the in-depth analyzes we conducted within the scope of the research, we decided that the 4 main themes detailed in the findings section can explain this phenomenon. These themes are “1. planning, 2. classroom management, 3. student-centered teaching, 4. positive attitude development.”

In our research, the fact that mind and intelligence games can be used effectively in social studies lessons comes to the fore. Although this phenomenon undoubtedly contains some difficulties and challenges, it can also offer important opportunities for teachers and students in obtaining an effective, entertaining and innovative social studies teaching (Adalar, 2021a; Çağır & Oruç, 2020). The first of these challenges pointed out by the teacher candidates is the difficulties that may be encountered in order to plan the lesson well. According to the teacher candidates, in order to be able to benefit from mind and intelligence games effectively in social studies lessons, teachers need to make a good preparation and planning in terms of both arranging the learning environment and providing preliminary information and equipment support regarding these games. However, considering the content density of the current social studies curriculum in our country, it can be said that there are some disadvantages in this regard. Therefore, it is understood that this fact is seen as a difficult problem to solve for teachers.

For all that, teacher candidates stated that after given a certain training (in-service training, course, workshop, etc.) teachers can use these games as an effective teaching method. A similar result was obtained in a study carried out by Sargın and Taşdemir

(2020). The participating teachers in that study pointed out that mind and intelligence games require some expertise, therefore, relevant training should be included in teacher training.

Another important issue pointed out by the participants in our research was the classroom management theme. In the context of this theme, three sub-themes emerged as "competition, labeling and the feeling of failure". Bringing the games to the classroom environment will bring the element of competition. However, organizing and managing the competition correctly is directly related to the competence of the teacher in this regard (Baek, 2008; Yıldırım, 2016; Talan, Doğan & Batdı, 2020). As detailed in the research findings, the formation of a negative competitive atmosphere that can cause ambition and conflict in the classroom can create a compelling factor for the teacher in terms of classroom management. In this context, group competition and/or reward-based were seen as positive, while competition based on individual or grades was seen as negative. As stated in different studies in the literature, it can be said that it would be an important approach for the teacher to keep this situation under control and to emphasize group dynamics (Kurbal, 2015; Demirel & Karakuş Yılmaz, 2019; Sadıkoğlu, 2017; Marangoz, 2018). On the other hand, it was very meaningful that the teacher candidates pointed to the labeling phenomenon that could disrupt this group dynamic. It was emphasized that especially the students with low academic success or inclusion students may be exposed to labeling with the thought that they may push the group to failure. Considering the practices of mind and intelligence games, it can be said that this anxiety comes to the fore as a compelling factor in classroom management. However, no other study pointing to this problem was found in the literature. The third important point emphasized about classroom management is the possibility of feeling of failure in students. It should not be overlooked that these games, which require serious prior knowledge and cognitive competence, can be challenging for students. (Demirel & Karakuş Yılmaz, 2019). According to the teacher candidates, the fact that teachers prefer the correct/useful game in line with the class/age level or the aims of the course may in a way prevent this problem from occurring.

We think that the dimensions of "student-centered teaching and positive attitude development" that we determined in the research should be evaluated together. Because the inclusion of mind and intelligence games in social studies teaching can contribute to student-centered teaching and so pave the way for students to acquire positive attitudes. According to the teacher candidates who participated in the current study, mind and intelligence games enable teachers to discover different aspects of both themselves and students. Our finding is supported by different studies conducted on mind and intelligence games. For instance, in an empirical study carried out by Dokumacı Sütçü (2018), it was reported that mind and intelligence games improved teacher candidates' geometric thinking skills. Similarly, in an empirical study carried out by Savaş (2019) with 3th grade life sciences teacher education students, elective mind and intelligence games course is found as effective on the development of teacher candidates' critical-thinking skills. Many

researchs indicated that in-class activities with mind and intelligence games promote development of students' reasoning, problem-solving, strategic thinking, and communication skills (Kurbal, 2015 Demirel, 2015; Sadıkoğlu, 2017; Marangoz, 2018). Adalar and Yüksel (2017) carried out a study with 42 teachers in different branches who give mind and intelligence games course. In that study, teachers were stated that mind and intelligence games contribute to the development of students' high-level thinking, reasoning, and algebra skills, play an important role in getting students to enjoy school and socialize, and help them gain self-confidence as they can express themselves freely in lessons. Also, Demirel and Karakuş Yılmaz (2019) determined that activities with mind and intelligence games conducted in the Turkish and Mathematics courses improved students' problem-solving skills and academic success. Kurbal (2015), Bottino et al. (2013a), Demirel and Karakuş Yılmaz (2019) and Baş et al. (2020) also reported similar findings.

Additionally, the teacher candidates stated that this games can be used as an effective tool in teaching concepts included in the social studies curriculum. Especially, it can be argued that the teacher candidates agree that many verbal games can be used for these purposes. This finding is consistent with a previous study carried out by Çağır and Oruç (2020) examined the effectivity of mind and intelligence games on teaching concepts of the 6-grade social studies course. In that study, it was pointed out that the verbal mind and intelligence games improved students' learning of social studies concepts and academic success. Furthermore, Zirawaga et al. (2017) found that the use of mind and intelligence games such as "word hunt, crossword, hangman, and puzzle" can be effective in teaching some historical topics and concepts. On the other hand, the teacher candidates also emphasized that the inclusion of mind games in social studies lessons can increase group solidarity and contribute to the formation of strong relationships and communication among peers. In addition, they pointed out that evaluation practices with these games (eg. anagram, rebus) can make this process more enjoyable, provided that no evaluation is made with grades. Thus, it was stated that these practices could contribute to breaking the negative perceptions of students towards exams and reducing their exam stress. It is understood that the possible contribution of these games to the effective teaching of metacognitive skills in social studies course is an important factor in the fact that teacher candidates see mind and intelligence games as an important supporter of student-centered teaching approach. An important part of 27 skills in current social studies programs in Turkey consists of metacognitive skills such as "problem solving, decision making, critical thinking, innovative thinking, historical empathy, analytical thinking". Considering that skill teaching has become even more important in the perspective of "social studies as a reflective inquiry" with the new program updated in 2018, we think that mind and intelligence games offer important opportunities in this context. Considering that with the adoption of the understanding of "social studies as reflective inquiry" in the new program, which was updated in 2018, it can be claimed that mind and intelligence games offer important opportunities in this context, considering that skill teaching to children has become even more important.

In summary, mind and intelligence games were evaluated by teacher candidates as an important tool for effective social studies teaching. They have been frequently stated that these games have important opportunities, especially in the teaching of metacognitive skills and improving students' interest and motivation towards the lesson. Many studies indicated that in-class activities with mind and intelligence games promote development of students' reasoning, problem-solving, creative thinking, strategic thinking, and communication skills (Bottino et al., 2007; Kurbal, 2015; Demirel & Karakuş Yılmaz, 2019; Sadıkoğlu, 2017; Marangoz, 2018). Also, there are some studies pointing out that these games contribute positively to the attitudes and motivation of the students (Ott & Pozzi, 2012; Orak, Karademir, & Artvinli, 2016; Esen, 2019). On the other hand, the participants also stated that using mind and intelligence games in social studies course might cause some difficulties. There are also studies in the literature that point to these difficulties (Bottino et al., 2007; Devecioğlu & Karadağ, 2014). In particular, the issue of integrating these games into social studies lessons and effectively managing these applications in crowded classrooms has been a serious concern. Although the participants are generally positive, we think that the main reason why they expressed such concerns is that they did not receive any training on the educational use of mind and intelligence games. Considering the lack of training and experience, such concerns might be considered normal. Bottino, Ott and Benigno (2009) pointed out the importance of teacher's role in planning and educational organization of the mind game-oriented lesson, and underlined that teachers should have sufficient academic expertise on mind and intelligence games. In addition, we think that the innovative studies carried out by Adalar (2021b, 2021c) can be an important resource for teachers and researches regarding the integration of mind and intelligence games into different course.

5 IMPLICATIONS FOR PRACTICE AND FUTURE RESEARCH

Based on the results of the current study, the authors made some suggestions. First of all, to support and motivate partners in education on mind and intelligence games, informative activities can be organized for educators, students, and parents. Moreover, student clubs on mind and intelligence games can be established for undergraduate students of social studies teacher education programs and thus, students can experience these games. Furthermore, selective mind games courses at an undergraduate level can be provided by academic staff who has some expertise. Sample activities for using mind and intelligence games in social studies courses can be prepared at workshops with field experts and social studies teachers who conducted mind games course. To increase the professional self-confidence of social studies teachers, in-service teacher training can be enriched with workshop activities on mind game training and practices. University administrators may organise in-service training programs for instructors on mind and intelligence games as implementing them in courses may increase learner satisfaction and contribute to a more positive classroom environment. To teach students the use of virtual platforms outside the school more effectively, digital mind game applications including

educational content and integrated with curriculum can be prepared in classroom and school. Future studies can be conducted examining the impacts of using mind and intelligence games in education practices with different types of samples and cases.

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