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Social Studies in Improving Students' Map Skills: Teachers' Opinions

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Abstract
Teaching skills is one of the building blocks of Turkey's Social Studies Instructional Program. Via skills, information can be effectively transformed into high-level behaviors, that information may become a part of one's daily life, and that one may make right decisions concerning major issues in his/her life. Map skills are called "spatial perception skills" within Turkey's Social Studies Instructional Program. Map skills – one of the basic geographical skills – can easily be employed by students to solve a wide variety of problems in their daily lives. The opinions and experience of teachers who have been instructing this course should be taken into consideration in order to decide whether students are successful or not at gaining these skills during their social studies course. As such, this study was conducted using a survey model in accordance with the qualitative research method. Research data were collected via semi-structured interviews held with Social Studies teachers living in Eskisehir, Turkey during April, May, and June of 2011. All data were analyzed via content analysis. The research findings have revealed that students' map skills are perceived to be weak based by social studies teachers and that there is a disagreement as to the effectiveness of Turkey's Social Studies Course Instructional Program in equipping students with these skills. Moreover, teachers were found to be of the opinion that not only are students' opportunities to practice and improve their map skills limited, but that there are a number of problems stemming from students, the Social Studies Course Instructional Program, and the physical infrastructure of schools. For this reason, relevant suggestions have also been included in this study.

Keywords: Map skills • Social studies • Social studies course instructional program • Social studies teachers • Primary education students

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Appearing frequently in almost every field of education recently is the concept of skills, which may be defined as "the ability to constantly sustain a certain level of achievement in any kind of activity" (Paykoç, 1991, p. 13). Since it is only via skills that information may be effectively transformed into high-level behaviors, that information may become a part of students' daily life, and that they may make right decisions concerning major issues in life, the skills most often found in the instructional programs of many countries, and the gradual application of these skills across different grades should also be seriously considered in Turkey.

Skills are one of the building blocks of the Social Studies Instructional Program. The skills in this program are listed as abilities that should first be taught to students, who are then expected to develop and transfer them into their every-day lives during the learning process. Among these, map skills are included as part of "spatial perception skills" group. Being one of the basic geographical skills, spatial perception and map skills are understood to be tools that students can use not only to eliminate a wide range of problems in their daily lives, but that can also help students' lives to be easier (Gersmehl, 2005, p. 97; Geography Education Standards Project [GESP], 1994; Harte & Dunbar, 1994, p. 1). The reasons for this include first and foremost the fact that humans exist within space. Space bears an important role for humans to fulfill their activities and gain experience. Although the meaning of space may vary based on how humans perceive and evaluate their surroundings (Tümertekin & Özgüç, 2004, p. 49), no matter where on Earth, people are curious to know about the spaces in which they and others live. Since such is the case, maps serve as one of the best sources to satiate this curiosity. The better a student is able to read a map, the better he will be able to interpret the spatial information regarding both the globe itself and where he lives. and the globe. Since it will also be easier for such a student to make sense of the world, he may then adopt an attitude in which he sees himself as a world citizen (Catling, 2005; Harte & Dunbar, 1994, Kaya, 2012a; Taş, 2006). As spatial perception skills improve, individuals may better understand the differences and similarities between distant places, explain how this affects human activities, learn that distant places are interdependent, and gain information about the relation that these subjects have with both physical and human processes (Akengin 2012, p. 203). Phenomena in social studies are explained in reference to the place in which they are observed (Ünal, 2012, p. 63). Map skills help people adapt to their daily lives and the environment in which they live, while also contributing much to the socialization process. Furthermore, these skills are of considerable importance in solving various problems related with space, such as the misuse of nature (Demiralp, 2006a; Bahar, Sayar, & Başıbüyük, 2010). According to Kızılçaoğlu (2007), since all events take place in space and those with map skills are better at gathering information about space, individuals with strong map skills are able to undertake significant responsibilities both for themselves and their societies. For these reasons, spatial perception and map skills should be thoroughly taught to students.

Primary education serves as a major opportunity to teach children spatial perception and map skills (Parker, 2001, p. 148). Basic map skills to be ingrained upon students in their Social Studies course bear significance for their development spatial perception and global positioning skills, which will then aid them in their future by facilitating their entrance into a globalizing world. During the 4th and 5th grades of primary education, students learn how to produce sketches and drafts, how to express objects and phenomena with symbols, how to use ready-made sketches, and how to read a globe, all of which are preliminary phases of spatial perception. In addition to this, in 6th and 7th grades, when their abstract thinking skills have sufficiently developed, students are taught about other components of maps, such as scales, varying details, recognizing map types, reading and understanding the information on a map, and conveying new information (Mill Eğitim Bakanlığı [MEB], 2005a, p. 10, 2005b, p. 10). The opinions and experience of Social Studies teachers are invaluable in order to determine whether students actually master these skills or not, to identify students' problems, and to devise relevant suggestions for these problems. Recently, quantitative methods have been widely employed in both Turkish and international studies on the level of students' map skills and the place of Social Studies in teaching map skills. A conceptual model was devised based on cognitive field theory philosophy to teach map skills to students from kindergarten to 8th grade in McClure's (1992) dissertation titled "A Conceptual Model for Map Skills Curriculum Development Based Upon a Cognitive Field Theory Philosophy." In his study titled "The Mapping Abilities of Young Children: Children Can," Blaut (1997) showed how students' map skills could be improved by using such visual materials as aerial photos. Lenhoff and Huber (2000) produced evidence as to how map activities were effective in enhancing students thinking and learning skills in their study "Young Children Make Maps." One can find a discussion about what can be

done in the classroom to enrich students' map skills in Verdi and Raymond's (2002) research "Learning with Maps and Texts: An Overview." The importance of using maps in a Social Studies course has been made clear by Bednarz, Acheson, and Bednarz's (2006) study "Maps and Map Learning in Social Studies." Furthermore, Klonari (2012) completed an experimental design study titled "Primary School Pupils' Ability to Use Aerial Photographs and Maps in the Subject of Geography" with thirty-six 11-year old students, and discovered which skills of students were improved through the use of aerial photos and maps in classes run by unconventional methods.

Several studies have been conducted in Turkey on students' map skills and on the role of Social Studies education in expanding these skills. Conducting a qualitative study as a Ph.D dissertation titled "An Analysis of 6th Graders' Spatial Cognition Skills in a Social Studies Course," Ocal reached telling results on students' spatial cognition. Similarly, in an MA thesis titled "Evaluation of 6th Graders' Map Skills and Teachers' Opinions about Using Maps," Akar administered a knowledge-skills achievement test to 6th graders and a questionnaire to Social Studies teachers in central Antakya within the province of Hatay. The findings indicated that students had poor map skills and that Social Studies teachers considered their students weak in certain map skills and good in others. Akar also found that teachers' opinions did not vary across seniority, graduation field, or where they worked. Ocal designed another qualitative study titled "6th Graders' Interpretations of Aerial Photos" to show that alternative materials could easily be utilized for the teaching-learning practices in Turkey. In his study, Ocal concluded that students not only had trouble building spatial relation between aerial photos and their environment, but that they were also unable to locate landmarks in their surroundings on the aerial photos. In their study "Analysis of Sketch Reading Skills of Primary Education Students (Erzincan case)," Bahar et al. (2010) determined that students' abilities to sketch and read map were poor, and that these skills varied across gender, grade, and family socio-economic background. Investigating all the skills within the program, the study titled "Achievement Levels of the Skills Included in Turkey's Social Studies Course Instructional Program" concluded that spatial perception skills were only partly engrained upon students (Çelikkaya, 2011). Duman (2011) identified the use of maps and teachers' opinions about the use of maps in a Social Studies course. Sönmez and Aksoy (2012) found in their study entitled "Determining Students' Map Skills in the Second Echelon of Primary Education" that the levels of students' map skills differed significantly across grades, school type, their teacher's major, students' math scores, and neighborhood. In their experimental study titled "The Influence of Using Animation and Digital Maps on Students' Spatial Perception in a Social Studies Course," Aktürk, Yazıcı, and Bulut (2013) determined that employing animations and digital maps were effective in improving students' spatial cognition. In the light of the previous research, this study aims to refer to Social Studies teachers' experiences and opinions when making decisions about students' map skills. Accordingly, answers have been sought for the following research questions.

What do Social Studies teachers

- think about their students' map skills?
- what do they think about the effectiveness of the Social Studies Course Instructional Program in improving students' map skills?
- do to improve their students' map skills?
- face as problems during their endeavors to enhance students' map skills?
- suggest to improve students' map skills?

Method

Research Model

Aiming to determine the effect of a Social Studies course over students' map skills based on teachers' opinions, this study has employed a qualitative research method. In this sense, "perspective," rather than "objectivity," has been emphasized based on the idea that "there is no single correct way to organize or present information, there are merely a multitude of facts and different and various perceptions" as underlined by the post-positivism or interpretivist approach. Events and phenomena have been deeply scrutinized, explained, and interpreted (Yıldırım & Şimşek, 2013, p. 34). One of the qualitative research designs, phenomenology, has been utilized in this study. What matters in phenomenology is experience. One's experience should be examined in order to understand how one assigns meaning to events. Answers are sought to such questions as "What are the individual's experiences about the phenomenon?" and "What are the setting and conditions influencing that individual's experience with said phenomenon?" (Creswell, 2007, p. 61–62). All research data have been collected using semi-structured interviews.

An interview is considered to be a really strong method since it eliminates the limitations of writing-based tests and questionnaires and efficiently brings out participants' data, opinions, experiences, and emotions. Semi-structured interviews were held in accordance with an interview form prepared in advance. Interviewees were asked systematic and appropriate questions, and the order of questions were changed when necessary. Interviewees had the freedom to express their opinions the way they wanted. In addition, the researcher helped the interviewees to elaborate their answers by asking side or sub-questions if the flow made it necessary, which assisted the researcher to collect systematic and comparable information (Patton, 1987, p. 111; Yıldırım & Şimşek, 2013, p. 150).

Research Sample

The basic aim of the studies employing the interview technique is to generalize the data collected from the research sample not to the entire research universe, but to other individuals sharing the same or similar properties with the participants (Schofield, 1990, p. 226, cited in Türnüklü, 2000). Findings obtained after studying a limited number of subjects holistically and comprehensively are used to interpret other individuals displaying the same or similar features. Therefore, Patton (1990, p. 184) underlines that there are no strict rules about sampling in scientific studies utilizing qualitative research techniques such as interviews. Moreover, he adds that the size of a sample may vary with respect to what is being researched, the aim of the study, what is more practical and reliable, and what can be done within the limits of time and sources available. One of the purposeful sampling methods, the maximum variation sampling method, has been used in this research (Yıldırım & Şimşek, 2013, p. 136). The variety of the sample in this research has been maintained through teachers' majors and seniority levels, socio-economic differences between the schools in which they work, and schools' affiliation as either a state or private school. Participants' demographic information is presented in Table 1.

Of all the participants, 13 were female and 7 were male, their seniority ranging from 7 to 33 years. The schools, all of which are affiliated with the Eskisehir Provincial Directorate of National Education, in which participating teachers worked at the time of the study were Melahat Unugur, Ataturk, Sami Sipahi, Seker, Ibrahim Karaoglanoglu, Sehit

Table 1
Demographic Information Concerning the Participants

Pseudonyms	Gender	Academic Major	Teaching Experience (In Years)
HO	M	Anadolu University, Open Education Faculty Bachelor's Degree Completion Program, Geography Department	33
FG	M	Ataturk University, Faculty of Letters, History Department	28
SA	F	Gazi University, Faculty of Education, Program in History Teaching	26
HA	F	Ankara University, Faculty of Languages, History, and Geography, History Department	23
AP	F	Ankara University, Faculty of Languages, History, and Geography, Geography Department	23
NA	F	Gazi University, Faculty of Education, Program in History Teaching	20
NC	F	Anadolu University, Faculty of Letters, History Department	20
AGC	F	Osmangazi University, Faculty of Science and Letters, History Department	18
ST	F	Osmangazi University, Faculty of Letters, History Department	18
KA	M	Inonu University, Faculty of Letters, Program in History Teaching	18
GA	F	Istanbul University, Faculty of Letters, History Department	17
MK	M	Celal Bayar University, Faculty of Education, Program in Social Studies Education	16
UC	M	Nigde University, Faculty of Education, Program in History Teaching	16
TE	F	Ataturk University, Kazım Karabekir Education Faculty, Program in Social Studies Education	16
UA	M	Anadolu University, Faculty of Letters, Graduate School of Social Sciences, MA History Program	16
EOO	F	Manisa Celal Bayar University, Faculty of Education Program in Social Studies Education	16
KS	F	Karadeniz Technical University, Faculty of Education, Program in Social Studies Education	10
OY	F	Anadolu University, Faculty of Education, Program in Social Studies Education	8
ETE	F	Anadolu University, Faculty of Education, Program in Social Studies Education	7
MD	M	Gazi University, Faculty of Education, Program in Social Studies Education	5

Ali Gaffar, Mithat Pasa, Mehmet Akif Ersoy, Barbaros, Private Atayurt, and Private Cagdas Primary Schools. Teachers' majors varied greatly; seven of them had graduated from Social Studies Education, 4 from History Teaching, and 9 from the Departments of History and Geography.

Data Collection and Analysis

Research data were collected using interviews held with participants during April, May, and June of 2011. In studies adopting a phenomenology design, repetitive interviews are carried out in order to obtain detailed information (Creswell, 2007, p. 61). A semi-structured interview form was developed prior to the first session of interviews in order to capture participants' opinions about the topic from all angles, to direct additional questions to them, to ask them to give examples or further explanations so as to clarify their points, and to ensure that interviews flowed smoothly (Bogdan & Biklen, 2007). Questions were consulted with an expert in order to confirm their validity, and a pilot study was administered with a Social Studies teacher to ensure that the questions were sufficiently clear. Following the finalization of the interview form, the data collection procedure started. Interview appointments were made with the participants, who were given a written document containing information about all the details of the research and a consent form, which was signed by each participant. Precautions were taken so that the interviews would be held in a quiet and cozy environment. Based on the data collected during the first interview sessions, each teacher was interviewed for a second time to elaborate what s/he had stated during the first interview. All interviews were audio-recorded so that the researcher would be better able to fulfill all the tasks required of her during the interview process, such as asking questions and lending an interested ear. Each session lasted approximately 30 minutes.

Research data were analyzed using content analysis. I order to complete the analysis, data had to first be conceptualized and then organized into a sensible manner. After organizing the data, themes explaining the data had to be identified (Marshall & Rossman, 1999; Miles & Huberman, 1994). The audio recordings were carefully listened to, and teachers' statements were transcribed word by word. The transcriptions were then sent to the teachers together with the translated versions so that they could check the correctness and precision of the documents. As for the data analysis, each question was subjected to content analysis separately. During this procedure, similar data were organized under specific codes and themes. Apart from the researcher, two other raters, themselves experienced in qualitative research, helped to determine the codes. The well-known formula of Reliability=Agreement/Agreement + Disagreement X 100 was applied to all the codes identified by the three researchers (Miles & Huberman, 1994). The three researchers' conclusions agreed at a rate of 95%. Since a value of 70% or higher is considered sufficient, the study's data analysis was accepted as reliable. The codes obtained at the end of this analysis were used to form the themes used in this study. In order to explain the findings, the results have been presented descriptively and include direct quotations from teachers. The codes, themes, and number of teachers' opinions have been rendered into (f) tables so as to help readers make sense of the findings. All participants were given a pseudonym so as to maintain their privacy while presenting their opinions.

Findings

Findings are presented under five titles in this part: (*1*) students' map skills, (*2*) the effectiveness of the Social Studies Course Instructional Program on improving students' map skills, (*3*) activities that Social Studies teachers employ to enhance students' map skills, (*4*) the problems that Social Studies teachers face while working to better students' map skills, and (*5*) suggestions by Social Studies teachers to enrich students' map skills.

Students' Map Skills

Table 2 displays Social Studies teachers' opinions on students' map skills. A closer look at the Table reveals that while most Social Studies teachers are not content with their students' map skills, some participants find their students' map skills to be good.

Table 2
Social Studies Teachers' Opinions Concerning Students' Map Skills and Relevant Reasons (N 20)

	Frequency
Students' map skills are inadequate	16
Readiness levels are poor	12
Poor spatial and directional knowledge	11
They can't fill in a map without names	4
Poor information about the legends	4
Don't know what colors mean in physical maps	3
Poor information about scales	3
Poor math knowledge and inability to deal with map calculations	3
Poor map drawing skills	1
Some students are better at reading and interpreting maps	4
Students with advanced visual skills have better map skills	3
Students of higher grades have better map skills than younger learners	3
Students' map skills vary based on the activities presented by teachers	2

Teachers have different ideas as to why their students have poor map skills. Generally, they state that the readiness levels of their students are low and that their students do not have a good command of spatial and directional knowledge. OY explains the reason why students' readiness levels are not high enough by saying: "I think they are inadequate because they come to us unprepared from the first echelon [of primary school (ie: from 4th grade)]…" Similarly, MD provides reasons explaing how students' spatial and directional information is poor by stating; "… They can't even find Turkey on the map… They can't tell the directions on a map, and they confuse the directions…" The same issue was noted by other participants as follows: HO, "…Some of them have difficulty locating the Black Sea region on the map…"; NA, "…they can't even show our neighboring countries on a map"; and SA, "… when I guide them, asking them to move west or east on the map, they get lost."

Other reasons expressed by some of the participating teachers for students' poor map skills are; "they can't fill in maps without names, they have poor knowledge about legends, they don't know the meanings of colors on a physical map, what they know about scales is not enough, they can't perform calculations on a map because of their poor math skills, and they are not good at map drawing." Quotations referring to these reasons are: TE, "…students have difficulty filling in maps without names…"; MK, "… They can't read maps using the information given in the legends, they can't understand the function of legends…"; UA, "The majority of students believe that green means grassy plains and that brown means mountains on a physical map. They can't read the colors as symbols of height…"; HA, "the topic of scales is way over students' heads. They can't convert distance measurement units, they can't cross multiply. They really know little about mathematics. So, they can't do calculations…"

One of the teachers who thought that students' map skills were good, EOO, explains, "…I think students' map skills vary tremendously. Some students with advanced visual skills or good drawing skills have better map skills, they improve more easily, they can read the information on a map with more ease, and they can draw conclusions through interpreting maps..." Likewise, ETE advocates a similar opinion by saying, "Students whose class or Social Studies teacher had worked on these topics are generally better at maps. Their performance is highly dependent on their previous experience in primary school. While some students are good, others cannot even locate the city they live in on a map."

The Effectiveness of Social Studies Instructional Program over Improving Students' Map Skills

Depicted in Table 3 are teachers' opinions on the effectiveness of a Social Studies Course in helping to develop students' map skills. Of all the participants, 13 stated that the Social Studies Instructional Program was weak in its ability to improve students' map skills while 7 others believed that the program had a sufficiently positive influence on students' map skills. The themes expressing how and why the participants considered the Social Studies Course Instructional Program to be poor are as follows: "the content is not conducive to enhancing students' map skills, neither the number nor the level of activities is appropriate, the activities are not suitable for practice or for map drawing, and the number of outcomes is limited and their contribution across different grades is not even." A few also think that "there is not enough time, and it is hard to connect the topics to real life."

Table 3
Social Studies Teachers' Opinions Regarding the Effectiveness of a Social Studies Course Instructional Program on Improving Students' Map Skills (N 20)

	Frequency
The Social Studies Course Instructional Program is insufficient in improving students' map skills	13
The content does not support the improvement of students' map skills	8
The number of activities is not enough and they are not level appropriate	5
Practical activities directed to map drawing are few in number	4
The number of outcomes is limited and their distribution across grades is not even	4
Planned time is not enough	3
The link to real life is weak	3
Social Studies Course Instructional Program is sufficient in enhancing students' map skills	7
The number of outcomes is enough	5
The number of activities is enough	5
Activities have links with real life situations	4
Assessment and evaluation methods are supportive of developing students' map skills	2

Simply thinking that the Social Studies Course Instructional Program is insufficient in improving students' map skills and that the content and the time are not enough according to AP, who states, "…There used to be regional studies and regional maps in the previous program. Drawings were included. Topics were about cities. There is none of this in the current curriculum. We're not covering each region one by one. We study the country on the whole, and can't go into details. These superficial transitions cause students to have weak map skills. What's more is that there is not enough time to handle each region one by one." KA, who thinks that the number of both practical activities targeting drawing skills and the outcomes

are not enough, explains his ideas by saying, "…I don't believe that our students' map skills are good enough. The most significant reason for this is that the program has problems in conceptualizing and practice. We can't provide students enough time or appropriate settings so that they may develop their map exercises to the degree they need… I don't think the outcomes or the activities designed to allow students to practice and map drawing in the program are enough. The present activities are inadequate. Since some of the activities for some of the grades are way above students' levels, it becomes more difficult to complete those activities." Likewise, TE, who believes that the number of outcomes is not enough and that the distribution across grades is uneven, states his/her opinions as follows, "The number of outcomes in the program is not enough. Sixth grade is fine, but 7th and 8th grades lack effective outcomes." As for the link between the activities and daily life, ETE says, "… map knowledge is taught through scales, locations, latitudes, and longitudes in the program. There isn't much about how to use them in daily life."

Those who consider the Social Studies Course Instructional Program to be sufficient in improving students' map skills state that the number of outcomes and activities is enough, that there are solid links with real life, and that the assessment and evaluation methods are conducive to supporting the development of students' map skills. One of those in favor of the program, UC, expresses his/her opinions as follows, "…The program we currently employ is completely effective in developing students' map skills. There are a lot of positive outcomes. The activities and topics make wide use of maps, and also require teachers to use maps more frequently." Similarly, KS states her ideas as, "…The inclusion of projects and performance tasks within the assessment and evaluation process makes the program more supportive. We provide students with exercises on different maps. Drawings and lighted maps are assigned as projects."

The Practice Social Studies Course that Teachers Offer to their Students in order to Improve their Map Skills

Table 4 depicts the practice samples that Social Studies teachers administer to their students in order to help them enhance their map skills. A closer look at Table 4 reveals that teachers mostly utilize location activities on a map to help their students develop their map skills. Other activities aiming to better students' map skills are as follows: projects and performance tasks on maps are integrated into the curriculum, teachers bring maps to the classroom, topics are discussed using maps, and computers and projectors are also frequently employed in the classrooms.

Table 4
The Activities Social Studies Teachers Administer to Improve their Students' Map Skills (N 20)

	Frequency
I design location activities on a map	11
I assign projects and performance tasks about maps	7
I ask them to prepare different maps	3
I take maps to the class and I use them as a teaching material	7
I use a computer and projector to show places on a map	6
I design activities with maps without names	5
Some exam questions of mine are about maps without names	2
We play games on a map	4
I use maps not only in my Social Studies course, but also in other classes	4
I ask them to bring an atlas to class	4
I ask them to draw maps	3
I present solid examples from daily life to study scales	2
I reinforce the topic through repetition and sample questions	2
I hold exhibitions about map studies	1

The participant OY states the following regarding exercises in which students practice locating certain places on a map: "At the beginning of recess, I tell them the name of a place or a river, and ask them to locate it on either a map of Turkey or of the World during the break. Whoever finds it first gets a an extra point on their oral exam grade." Stating that she assigns projects and performance tasks to her students, KS supports her views by saying, "…I believe that the program is not very effective in enriching students' map skills. For this reason, I have students complete a project where I ask them to construct maps using lights on a variety of different topics. They are free to study any topic they like, such as mines, agricultural products, or industrial products. They locate and illustrate the places where these things are found on the map using different lights."

Some of the participants list the activities they have students do to enrich their map skills as: working on maps without names; playing map games; using maps not only in Social Studies course, but also in other classes; requiring students to bring an atlas to the class; drawing maps; building links with daily life; and conducting exhibitions. A relevant quotation as to how they work on maps without names and as to what kind of games they play on maps is as follows: AP, "…We play games on a map where we locate places …We race to find out who can fill in the maps without names the quickest." UC says the following

with respect to his exam questions, "For instance, I give them an blank world map as their exam. For 6th graders, I ask them to write the names of continents on the correct land masses. And for 7th graders, I have them write the names of places where specific geographical discoveries were witnessed onto the correct land masses." Another related quotation is by ETE, who expresses her ideas as follows, "…There are really nice games you can play on maps. We generally make use of the online training program Vitamin here. There are some location games and puzzles about maps. We give some homework assignments similar to the activities we do in the class…" The next quotation, by participant NC, pertains to how maps are used not only in Social Studies courses, but in other classes as well; she says, "I use maps not only in my Social Studies course, but also in other courses. When we learn about the History of the Turkish Revolution, I employ maps to show what countries were located where, how the war started, and who attacked whom during the 1st world war. That way, the information becomes permanent for many students. " Concerning the exhibitions, ETE says, "Yeah we did something like this once. When we were studying the resources found in our country, we asked the students to prepare really big maps together with the visual arts teacher. The maps were big enough to place either agricultural products like wheat and barley or mines. We designed these maps as game materials and then put them on exhibit for the whole school to see."

The Problems that Social Studies Teachers Face during their Endeavors to Improve Students' Map Skills

Table 5 shows the problems that Social Studies teachers go through while trying to improve their students' map skills. Problems stated by the participants revolve around students, the Social Studies Instructional Program, the physical infrastructure of the school, the learning process, the examination system, teachers, course books, and families.

The participating teachers generally hold that students' map skills are weak and that students' levels are not sufficient to fully benefit from the maps. Apart from these, other problems, as presented in Table 5, include insufficient class time, problems about the physical infrastructure of schools, and lack of maps and materials. Accordingly, KA's states the following, "…the limited amount of time impedes conducting practical exercises with students. We can't design exercises like maps without names for our students. They should have a specific level of readiness when they come to us. But, they don't. We can't allocate enough time for map exercises due to pressure to complete the curriculum." Similarly, KS states, "… Schools are not equipped with classrooms with the necessary equipment for map exercises. Since I work at a private school, the number of students is not that high in our classes and the desks are wider. Yet, even our equipment is not sufficient. I can't imagine how classes in state schools are. Classes should be well enough equipped so as to provide simple map drawing activities, or there should be some separate rooms for these activities. The technological infrastructure also makes a big difference…" Problems pertaining to schools' physical infrastructure are included in KA's quote: "…Schools lack some facilities like computers, an Internet connection, projectors. I can't show everything to my students since classes are not equipped accordingly. For this reason, we sometimes have problems making abstract issues concrete. There should also be 3-D maps in schools. Teachers should have the chance to show geographical formations on these maps. Moreover, lighted tables should be used for drawing exercises…"

As for students' indifference and lack of enthusiasm, NC's states the following, "…they are not interested enough in maps. They don't want to study the maps or learn the locations of cities and countries… they show no sign of eagerness. They don't have any interest in them, not even in forecast maps where they can learn the locations of cities. They don't even know the locations of cities in Turkey… "

KS, who thinks that the Social Studies Course Instructional Program is not only inflexible and bad at helping students develop their map skills, but also limits the teacher, says, "…I don't think there are enough outcomes and activities concerning students' map skills within the program. I don't think the program is flexible either. Teachers are not free to choose the practice exercises. It is highly structured, and you have to follow it to the letter…" On the contrary, MD states that although the program is effective in improving students' map skills, the tools and materials used to do so are a problem, "…I believe the program includes the appropriate outcomes and skills with respect to map skills, but we can't work on these skills due to insufficient tools and materials. Like many other schools, mine does not have maps. We have insufficient visual materials…" OY, who believes that the program's load is excesses, states, "…I wish we had more time for map exercises, but I can't cope with that as a result of too many topics and activities in the program. As such, I can't work on scales as much as I want…"

Table 5
Problems Faced While Attempting to Improve Students' Map Skills (N 20)

	Frequency
Problems Pertaining to Students	
Students' levels of readiness	12
Students' poor interest and eagerness	5
Students do not bring an atlas to class	5
Students either do not do their homework assignments or have someone else do them for them	4
Students' math skills needed to tackle questions about scale and their related calculations are poor	3
Students' map skills vary greatly	3
Problems about Social Studies Instructional Program	
Class time is limited and we can't find enough time for map exercises	8
Less amount of time to practice map exercises is allotted in the new program	4
It's not a flexible program, and it limits the teacher	2
It is a very dense program	2
Problems about the Infrastructure of Schools	
Problems about the physical infrastructure, such as a lack of maps and materials	7
The setting is not appropriate for map drawing	4
Problems about Teaching-Learning Process	
Activities are similar	6
Practice is not sufficient	5
Use of computer technologies lessens the use of printed maps	2
Scales are still presented in an overly abstract way	2
Problems about the Examination System	
The examination system is an obstacle to improving students' map skills	5
Problems about Teachers	
Teachers' field knowledge is poor, they are not good at using maps, and they don't know GIS	4
Teachers have difficulty following the program	3
Problems about Coursebooks	
Coursebooks lack a sufficient number of maps and related activities	3
Some activities in the course books are not level appropriate	2
Problems about Families	
Parents are not interested	3
There is no problem	2

As for the problems pertaining to the teaching/learning process, NC states, "…Teachers should provide more variety in their classes. You can't always go with the lecture type. You need to involve the students in the process. Yet, it's just not that easy to do so. We can't offer practical exercises to our students. We are overwhelmed by the amount of workload on us. Plus, class time is limited too. It becomes preferable to just lecture and leave. Therefore, you can't take the students out of the class for some practical study." FG, who blames the examination system for the negative influence on students' map skills, reports, "…Kids are used to multiple choice exams. Some national exams like the SBS also require this. I mean, students have difficulty in even forming sentences upon request. They don't like reading much. Therefore, they can't express their opinions. They can't describe what they see. As a result, questions regarding maps are not preferred and students' map skills do not improve..."

UA, who indicates that teachers' field knowledge is not adequate, states, "…One of the problems about teachers may be their lack of field knowledge. Let me describe you something that happened to me. A colleague of mine was preparing a question about scales for an exam, but he had explained how to solve such problems incorrectly in earlier classes. Later, this turned into a debate among students. Based on this, I can say that teachers need to have a good command of field knowledge…Ask around, you'll see no one knows about GIS. Why? Because we are not trained. Maybe the new generation of teachers will be trained, but we are not…"

Problems pertaining to the course books are included in KS's quote, "…The number of maps in the course books is not enough. What's more is that map-related activities are also scarce." Similarly, SA states, "…the course books include various activities, yet they are so unnecessarily detailed. So detailed, in fact, that they are inappropriate for 6th graders' levels. They are more suitable for high school students… What's more is that the number of topic-related maps is not enough and the ones present are not easily understood by students."

Indifference on the part of parents is expressed in TE's quote: "Parents are not interested either. They should monitor what their children do. They should have their children complete any material that hasn't been finished. They should buy an atlas for their children if they don't have one. But, they are not interested in their children's education at all. Most of them don't even attend the PTAs…" On the contrary, UC's mentions no problems about parents, stating, "…We have no problems. It's the teacher who matters. Indeed, teachers are there to solve the problems. Now, I work in the second echelon [grades 5-8]. When students move to the second echelon, you can tell the difference. They

are either familiar with using maps or they are not. Yet, they all learn by the end of the map-related exercises and their map skills improve…"

Suggestions by Social Studies Teachers to Improve Students' Map Skills

Displayed in Table 6 are the suggestions by social studies teachers so that students' map skills might be improved. Suggestions revolve around the teaching/learning process, students, the Social Studies Course Instructional Program, teachers, schools' physical infrastructure, parents, and course books.

Teachers mostly put forward suggestions about the teaching/learning process. MK, who thinks that topics should be handled using maps and that different map exercises should be conducted in the classroom, says, "…Teachers may bring in some jigsaw maps to the classroom. They can use such maps during their lectures, and not only the maps on the wall. I believe it will be more effective for students… The political map of Turkey may be made into a jigsaw puzzle based on Turkey's 81 cities. Students may be presented with such activities during pre-school and during their first echelon years. Game-like activities should be designed. When they enter the second echelon [grades 5-8], different maps, such as maps detailing climates or the economy, should be employed." Likewise ST states the following, "…There are really nice computer games now. I even played these games with my 6th graders. I taught them the locations of cities in Turkey on a map. They like it a lot when a game atmosphere is created. They used to ask to play the game by themselves. If you can turn learning into an activity that would attract their attention, they like learning about map skills; otherwise, if you just put the map in front of them and tell them to locate several cities, it may be boring for them…"

GA, who considers projects and performance tasks necessary, states, "…When my colleagues and I

Table 6
Suggestions by Social Studies Teachers to Improve Students' Map Skills (N 20)

	Frequency
Suggestions about Teaching/learning Process	
Lessons should be taught on maps	15
Different map exercises appealing to every student in the class should be designed	12
Map exercises should be game-like, in which puzzles, crosswords, and jigsaws should be used	8
Maps without names should be used	7
Competitions should be organized	3
Activities regarding students' daily lives should be designed Map studies about current events and news should be conducted	1
Projects and performance tasks appealing to students' interest should be assigned	1
Computer technology should be widely used	6
Maps should be employed in different courses	4
Schools trips where maps are functionally used should be organized	4
Math teachers should be consulted for scale problems	3
The use of printed maps and technology should be balanced	2
Peer learning opportunities should be created	2
Visual arts teachers should be consulted to guide students in preparing maps from different materials, and exhibitions should be held	1
Students should be rewarded for their work	1
Suggestions about Students	
Studies about students' map skills should start as early as possible	1
Skills should be developmentally appropriate and be presented gradually	6
Suggestions about Social Studies Course Instructional Program	
Social Studies Course Instructional Program should include activities about the countries in the world and the regions in Turkey	2
Teachers should be given the freedom and flexibility in applying the program.	7
Suggestions about Teachers	
Teachers should be able to use three dimensional visuals, animations, and maps	2
Teachers should have a good command of field knowledge	4
Teachers should collaborate with families	3
Teachers should know GIS and be able to prepare maps	2
Teachers should be sufficient, interested, and eager	2
Suggestions about the Physical Infrastructure of Schools	
Problems about the physical infrastructure should be eliminated, and missing maps should be completed	2
Maps should be displayed on the walls of classes and corridors	7
There should be lighted desks for map drawing exercises	4
Classes should be freed from computer and the Internet related problems	1
Suggestions about Families	
Parents should motivate their children to hang maps of the world and Turkey onto the walls of their rooms	1
Families should support their children's map skills	5
Families should complete missing atlases	3
Suggestions about Course Books	
Course books should include plenty of map exercises	2
Teachers should be supported with CDs along with course books	2

assign projects and performance tasks, we include tasks about map drawings. For example, if we want them to prepare a map of climates, we assign a project accordingly. We determine the project topics, and 3 to 5 students choose among them based on their interests. Children get to choose how they will design it, whether they will use paint it or use another method. They prepare different maps of their own choice. This then helps them with their map skills. This is feasible…" FG, who suggests that students' works should be rewarded, states, "…Students may be assigned projects and performance tasks that will improve their map skills. If we reward students' good works, they make take the assignment more seriously…Rewards help students study better…"

The opinion that students should start studying on map skills as early as possible is included in the quote by EOO, "…In the new program, there are a limited amount of exercises about map skills for 4th and 5th graders. But it increases tremendously in 6th grade all of a sudden. That is another problem. I believe that it should start earlier. Students' interests may be captured through such activities as jigsaw puzzles and crosswords…"

OY's quote explains why the Social Studies Course Instructional Program should provide teachers with flexibility and freedom, "…Everything is ready-made. The teacher's book tells us which question to direct to our students. But, we should be free in choosing what to use, we should already know what to ask them. This over-help is actually a limitation. Teachers should be given more responsibilities. I mean, the program should be more flexible and should let teachers free in application…"

Suggestions pertaining to teachers can be found in the following quote by UA, "…Teachers' field knowledge is very important. If a teacher has poor knowledge of his/her field, then there is a problem. They should be skillful in using maps. They should be able to employ 3-D visuals, models, and animations. They should know how to get them. Indeed, they should be able to use Geographical Information Systems, and be good enough to prepare maps of their own." The quote by HO regards the suggestions about the physical infrastructure of schools, "…There must be maps in classrooms. Some teachers believe that slides will do the same job, but I support the use of tangible maps since I believe the kids should be free to touch the maps during recess and should even be allowed to draw on them. Maps without names should be ready for students to fill in. Because slides present temporary visual aids, students may not fully grasp what is shown on them. Classes, even the corridors should be decorated with maps… " MK also discusses equipment, stating "…Nowadays everybody is busy with this smart board stuff. Some of them have been placed in classes, but still many classes don't have them …"

As for the responsibilities of families, AGC states, "…Having a map is also necessary when students study at their homes. I, for example, hung both a world map and a map of Turkey onto the walls of my child's room. Sometimes, I tell him to check the current issues going on in the world on the world map. For instance, I say, here is Japan where the latest earthquake and tsunami stroke. I introduce them to countries. They ask questions about the countries they hear on television. They get to know our neighboring countries, seas and geographical regions by using maps. Students and families should be informed about the necessity of maps and the benefits of having maps both of our country and of the world at their homes. Actually, parents should be convinced about them benefits in order to support their kids at home. They should examine and discuss current issues on a map…" Another related quote by GA reads, "…Families should support their children. There are really good map games on the Internet. For example, they can play these games with their children. It may also be an opportunity for them to spend quality time with their kids…"

Suggestions about course books can be found in the following quote by NA, "…as I said earlier, sometimes we can't find what we are looking for on the maps at school. Thus, teachers should be sent CDs that they can employ to develop different activities about maps. These CDs must include detailed and up-to-date maps of countries and regions. They may accompany the course books, which should have a wide variety of map exercises. And, these exercises should also be integrated into the CDs…"

Discussion, Conclusion, and Suggestions

At the end of the research, several conclusions were drawn regarding the levels of students' map skills based on teachers' opinions, the effectiveness of the Social Studies Course Instructional Program in improving students' map skills, the activities that teachers design to better students' map skills, the problems they face, and the suggestions they have.

The current research has revealed that teachers generally find their students' map skills weak. Their reasons for perceiving this weakness are students' low levels of readiness; their poor knowledge

about locations, directions, scales, and legends; their inability to fill in maps without names; their not knowing the meanings of colors on a physical map; and their poor math skills. Many studies have reached compatible results and have also observed the following reasons for students' poor map skills: low levels of readiness; poor knowledge about locations, directions, scales, and legends; poor math skills; and insufficient exercise on maps without names (Akar, 2008; Aksoy & Ünlü, 2012; Bahar et al., 2010; McClure, 1992; Michaelis, 1988; Öcal, 2007; Sönmez & Aksoy, 2012; Yazıcı, 2006).

Aksoy and Ünlü (2012) tie the reason as to why students' levels of readiness are low to teachers' indifference about improving their students' map skills during their primary school years. They assert that students' map skills should be worked on with level appropriate materials and start during children's pre-school years. Since the inability to improve students map skills during primary education leads to problems in other courses, teachers are advised to hold gradual and systematic activities appropriate for their students' capacities.

Consistent with the results of the current study, Michaelis (1988, p. 337) explains students' incompetent map skills as "students think the upper part of a map is always north, they believe that north is always up and that south is always down. They assume that the symbols found on every map are the same and they don't know the meanings of colors." Likewise, the influence of math skills on students' map skills is stated by Koç (2008), and Sönmez and Aksoy (2012) as "the increase in students' math scores is also reflected in the improvement they display in recognizing and interpreting maps and the symbols on maps, finding directions, measuring distances, using scales, and determining locations and coordinates." Other studies point to the necessity of teaching ratios and proportions in students' math courses in tandem with teaching scales and maps in their Social Studies course (Aktürk et al., 2013; Golledge, 1993 as cited in Öcal, 2007). Map topics such as distance, field measurement, or figuring out the scale of a map all require a good command of math knowledge. Students will naturally not be able to solve these problems if they have poor math skills. Therefore, the research results indicate that students' math skills should be supported when working on scales, distance, fields, or similar calculations and when finding directions, locations, and coordinates.

As for students' incompetent map skills, Yazıcı (2006) states that Turkish students received poor scores on the Progress in International Reading Literacy Study (PIRLS) organized by the International Association for the Evaluation of Educational Achievements (IEA), and based on these scores, the author asserts that students' reading and map/graphic interpreting skills cannot be improved during students' primary education years. Nevertheless, Turkey's success in international exams, the question types employed in these exams, and the questions students cannot answer are all separate research topics.

Based on the participants' opinions, students with strong visual skills are good at map skills and that students' map skills improve depending on the activities designed by their teachers as they progress through their education. The literature review has produced inconsistent data concerning students' map skills. Some studies, like the present one, have found that students' with better visual intelligence learn about maps more easily (Bahar et al, 2010; Demirezen & Akhan, 2011; Selçuk, Kayılı, & Okut, 2004) whereas other studies favor the idea that students' skills in understanding and interpreting the figures, reading maps, measuring distance, and determining locations and coordinates improve as they move along primary education (Sönmez & Aksoy, 2012). Moreover, the finding that students' map skills vary greatly depending on the teacher is consistent with that of Sönmez and Aksoy (2012). Furthermore, in the current study, teachers with a degree in Social Studies were found to make a difference in equipping their students with map skills. Some scholars have attributed the variance of map skills across students to whether schools are part of the private sector or are state schools, with private schools being superior to state schools because of their better physical infrastructure (Sönmez & Aksoy, 2012; Verdi & Raymond, 2002). Students' map skills may vary due to a great many of reasons. Many factors may be influential on this variance, such as students' readiness levels, their interests and skills, teacher's field knowledge, the physical infrastructure of schools, and parental interest. This point should therefore be further investigated. However, based on the findings, one may conclude that teachers should make use of activities compatible with multiple intelligence theory in order to improve their students' map skills.

Another noteworthy finding of the present research pertains to participants' opinions about the effectiveness of the Social Studies Course Instructional Program in enriching students' map skills. While a majority of teachers thinks that the Social Studies Course Instructional Program is insufficient in improving students' map skills, others defend that the program is sufficiently effective in achieving its outlined goals.

The related literature also hosts contradicting opinions regarding the same topic. The fact that teachers' opinions concerning the effectiveness of the Social Studies Course Instructional Program in teaching map skills vary may be compatible with the results of other studies (Aykaç & Başar, 2005; Gömleksiz & Bulut, 2006). Yet, Akar has already concluded that teachers' opinions about students' map skills do not vary across seniority, their field of graduation, and the schools in which they work. However, in their study examining the effectiveness of the Social Studies Course Instructional Program in practice, Gömleksiz and Bulut (2006) found that the opinions of teachers living in Istanbul, Ankara, Izmir, Kocaeli, Van, Hatay, Samsun, and Bolu were significantly different, and they attributed this difference to the equipment available in schools. The difference across participants' opinions in this research may be explained by their field of graduation, seniority, and the socio-economic background of the schools in which they work. Further research is needed to better account for the observed differences in opinions.

The findings point to several problems in the Social Studies Course Instructional Program's content, activities, durations, and links. Literature is piled with studies investigating instructional programs teaching map skills (Akar, 2008; Buğdaycı & Bildirici, 2009; Demiralp, 2009; Ertuğrul, 2008; Kızılçaoğlu, 2007; Koç & Aksoy, 2009; McClure, 1992; Öcal, 2007; Sönmez, 2010; Sönmez & Aksoy, 2012, Yazıcı, 2006). Some scholars have stated that the program does not include a number of map skills, that its outcomes should be revised (Sönmez & Aksoy, 2012), and that the content concerning map skills should be enriched (Aksoy & Ünlü, 2012). On the contrary, Ünal (2012) reported that the 2005 Instructional Program is both well-planned and much better than the 1998 Instructional Program, which ignored such skills as reading maps and using atlases. However, the same author criticizes the program's pitfalls, stating, "Spatial perception skills are covered in only one unit titled *Life on Earth* for 6th graders, and the outcomes that will enable students to master this skill are not clearly stated. Moreover, other units add further obscurity to the role of this skill." Yazıcı (2006) explains that 40 to 60% of course books consist of visual elements such as maps, graphics, and pictures as mandated by the Social Studies Course Instructional Program, and that the program is supportive of students' map skills at least in terms of content. Similarly, Çelikkaya (2011) advises that more help should be incorporated into the teacher's book about how to furnish students with map skills included in the Social Studies Course Instructional Program, and that the program may be reviewed and revised.

The relevant literature exhibits different opinions as to the effectiveness of the Social Studies Course Instructional Program in improving students' map skills. A detailed analysis of the program shows that throughout the entire program (grades 4 to 7), the highest number of outcomes and activities actually effective in increasing students' map skills is included in the learning field: "Humans, Places, and Surroundings." As mentioned by Ünal (2012), spatial perception is regarded as a direct skill in only one of the units. However, the Social Studies Course Instructional Program consists of outcomes regarding spatial perception skills in every learning field. Thus, other types of activities to improve students' map skills should be presented within different learning fields and various units.

Findings have also shed light onto the activities that Social Studies teachers employ to improve students' map skills. As a result, the activities utilized by the participants have been determined to be mostly limited to in-class activities. On the contrary, the relevant research indicates that activities targeting to better students' map skills, especially directional skills, should be conducted outside the class (Bahar et al., 2010; Bailey & Fox, 1996; Klonari, 2012; Öcal, 2009; Sönmez & Aksoy, 2012). Teachers have expressed that they mostly utilize location activities on a map and projects and performance tasks to enrich students' map skills. Weeden (1997) underlines the significance of projects and performance tasks in improving students' map skills and provides several examples. As for Weeden, students may be asked to determine the green areas in their neighborhood, to show their distribution on a draft map, and to prepare a draft map for the possible shapes and places of new green areas. That way, students may have the chance to compare their own maps with other maps, and understand that different kinds of maps serving specific purposes may be developed. Likewise, Kızılçaoğlu (2007) underpins the role of map exercises in enhancing students' spatial perception skills. Throughout the whole research, only one participating teacher mentioned exhibiting the maps that students have made. As stated by Weeden (1997) too, displaying students' maps in classrooms or throughout specific places in schools will have a positive influence on students, increase their interests, and will make them more enthusiastic.

In-class activities employed by teachers include the use of computer technologies, working on maps without names, map games, drawing maps, and providing examples from daily life. A large body of research indicates the benefits of using computer technologies and the Internet in education (Atal & Koçak Usluel,

2011; Herrington & Kervin, 2007; O'Sullivan, 2010; Shy-Jong, 2008; Westhuizen, Richter, & Nel, 2010). Google Earth, Google Maps, and GIS are particularly favored because they have a positive affect not only on map reading and drawing skills, but also on spatial thinking skills (Bednarz, 2004; Lee & Bednarz, 2009). Despite the benefits, a common understanding suggests that a balance between technology and printed materials needs to be maintained. Kızılçaoğlu (2007) provides activity examples, such as using maps without names that employ different scales, on the one hand, and locating different places by using different colors on these maps, on the other. According to Castner (1990), students should learn using maps instead of simply learning about maps and their contents. Thus, maps without names are considered important due to their ability to offer students opportunities to practice and learn.

It was found in the current study that several participants stated that they make use of map games or have asked students to draw their own maps. Relevant studies report the role of games and different activities in improving students' spatial perception and map skills (Klonari, 2012; Sönmez and Aksoy, 2012). Experts advise that sketches should be used with 4th graders as a starter for map exercises, and that more complicated maps should be built in later grades. Students may keep journals of maps, they can mark trade routes on maps, or they can show the culture centers with separate symbols on maps. In addition, games like treasure hunt and captain's log can be played by using sketches, mind maps, wall maps, maps without names, and animated maps (Bircan, 2013; Bircan & Safran, 2013; Cleaf, 1991, p. 145).

The research findings show that the participants generally make use of different methods and techniques during the teaching/learning process to help students develop their map skills. Moreover, the results have also indicated that teachers have poor field knowledge, that they are not good at maps, and that they do not know GIS. In fact, just as studies have long verified the effectiveness of using different methods and techniques during the teaching/learning process in enhancing students' abilities to use maps and spheres, so have they found that teachers' field knowledge is of high importance(Aktürk et al., 2013; Atal & Koçak Usluel, 2011; Blaut, 1997; Demiralp, 2006b; Klonari 2012; Özcan, 2008; Öcal, 2009). Therefore, suggestions on increasing teachers' competence about the weak points identified in the current study are of great value.

The last group of findings sheds light onto the problems that Social Studies teachers experience during their endeavors to improve students' map skills. These problems include students, the program, class time, the physical infrastructure of schools, the teaching/learning process, the examination system, course books, and families. Suggestions put forward by teachers in order to enrich students' map skills are mostly relevant with these problems. Thus, the problems and relevant solutions suggested will be discussed simultaneously in this part.

Teachers have stated that the most significant problems are related to students. The list of problems concerning students is as follows: they have low levels of readiness; they are neither eager nor interested, they do not bring an atlas to class, they do not complete their homework assignments, and they have poor math skills. Accordingly, teachers' suggestions are that students should being working on their map skills as early as possible and should follow both a level appropriate and gradual study schedule. These suggestions are both supported by other studies (Cleaf, 1991; Sönmez and Aksoy, 2012). There are several studies explaining what map skills are and what competence is needed so as to furnish students with these skills through a developmentally appropriate and gradual program (Demiralp, 2006b; Harte, 2001, p. 1; Klonari, 2012; McClure, 1992; Muir & Frazee, 1986; Savage & Armstrong, 1987; Taş, 2006). Students with weak map skills should be endorsed with complementary exercises (Bahar et al., 2010; Bailey & Fox, 1996; Demiralp, 2009; Sönmez & Aksoy, 2012; Weeden, 1997). The first maps that students see may be maps of familiar places such as the play ground, school, and class, and aerial photos can easily be employed as early as pre-school years if certain points are followed (Bailey & Fox, 1996, p. 110; Blaut, 1997; Plester, Blades, & Spencer, 2003). Since the use of an atlas helps students' retention and achievement levels (Kaya, 2012b; Kızılçaoğlu, 2007; Kuşçu, 2011), students should be encouraged to use an atlas. Another interpretation of the research results is that teachers' approaches, attitudes, and practices within the teaching/learning process are effective in mitigating problems related to students.

Some of the participating teachers referred to problems about Turkey's Social Studies Course Instructional Program, issuing several complaints concerning limited class time and and space allocated for map exercises. Other studies have underlined similar problems (Aksoy & Ünlü, 2012; Kuşçu, 2011; Sönmez and Aksoy, 2012; Ünal, 2012). Teachers' suggestions regarding the Social Studies Course Instructional Program include

allocating more time on exercises that focus both on countries of the wider world and on the various regions of Turkey, on the one hand, and providing teachers with more flexibility and freedom to implement the various aspects of the program, on the other. Other studies have indicated that maps are not appropriately used for the unit titled "Turkey's Neighbors and the Larger Turkic Speaking World" in the Social Studies course book for 7th graders, and that the use of maps should be outlined in terms of units/outcomes in the program (Ünal, 2012). Moreover, the Social Studies Course Instructional Program is expected to present a clear list of materials and tools (maps, graphics, table, spheres, diagrams, time line) based on the link between outcome and content. Parallel to this, course books are expected to guide teachers more efficiently in deciding what skills to teach and how (Çelikkaya, 2011; Ünal, 2012). As a result, basic map skills are conceived to be necessary for all disciplines forming the Social Studies course. That is why the program should support students' efforts to read level appropriate maps, should allow them the freedom to work on maps, and should equip teachers with flexibility and freedom, especially from time constraints.

The examination system and course books have been noted as further obstacles hindering students from improving their map skills. Other studies producing similar results suggest that performance tasks about map exercises should be assigned as part of achievement tests (Bircan & Safran, 2013) and that course books should make use of visual materials, such as maps and graphics, for the study questions in each unit (Yazıcı, 2006). As stated by Aktürk et al. (2013), students should be told that they need these skills not only to pass the class, but also to make their lives easier. Again, relevant research has shown that although course books include many concepts under positioning and coordinate skills, there are still many more missing (Aksoy & Ünlu, 2012; Kuşçu, 2011), and that maps should be used more often in the course books (Sönmez & Aksoy, 2013). Furthermore, the maps in the course books are criticized since they are not compatible with the program and with students' cognitive levels, they are not in the best interest of Turkey, they do not follow the principles of map drawing, and there is no relevant model or approach (Ünal, 2012). It is of paramount significance to complete these missing parts in the course books and to prepare them meticulously since they are students' primary resources.

Like the present one, many other studies have reported that schools have poor physical infrastructures, lacking many maps and materials. In this study, teachers have stated that there are no maps on the walls of schools and that their current supply of maps is not adequate either quantitatively or qualitatively. Moreover, schools do not have suitable settings for map drawing and practice, and map rooms or Social Studies classes are not included in their blueprints (Aksoy & Ünlü, 2012; Bal & Yiğittir, 2012; Bircan & Safran, 2013; Demirezen & Akhan, 2011; Kuş & Çelikkaya, 2010; Yılmaz & Tepebaş, 2011; Zaman, Günal, & Zaman, 2011).

Compatible with the problems, teachers' suggestions regarding completing the missing parts in the physical infrastructure of schools. Various studies have reported that schools should have a Social Studies classroom, and that this classroom should be wired with materials effective in improving students' map skills, such as maps, spheres, graphics, 3-D models, computers, Internet, pictures, and photographs (Kaya, 2012b; Sönmez & Aksoy, 2012). Moreover, other suggestions formulated by other studies are that schools should have map rooms and settings where students can practice (Aksoy & Ünlü, 2012); these settings should be furnished with drawing tables and the necessary tools and materials (Sönmez and Aksoy, 2013); teachers should have easy access to aerial photos, maps, and various visual materials (Aktürk et al., 2013; Öcal, 2009); and relevant modifications should be completed so that teachers can simply make use of technology (Kaya, 2012b; Kuşçu, 2011; Paykoç, 1991). As depicted by this and other related research, the physical infrastructure of schools, tools, and materials play a crucial role in enhancing students' map skills.

The research findings also indicate several other problems, such as not designing different activities within the teaching/learning process, inadequate practice opportunities, and the difficulty making a number of the abstract issues concrete. In addition, teachers have been found to lack an adequate amount of field knowledge, to be bad at maps, not to know GIS, and to experience difficulties in carrying out the program. Similarly, other studies have also concluded that teachers are not aware of the new methods and approaches and that they are not competent with such computer technologies as satellite images, GIS, Google Earth, and Google Maps (Aksoy and Ünlü, 2012; Aktürk et al., 2013; Bircan & Safran, 2013; Demiralp, 2006a). As for the suggestions verbalized during the interviews, teachers are expected to know how to make use of 3-D visuals, animations, maps, GIS, and to prepare different maps.

Although the problems related to the teaching/learning process are not the most frequently mentioned problems

by the participating teachers, they received the highest number of suggested solutions. Teachers' suggestions to better students' map skills include playing map games, puzzles, and crosswords; conducting exercises on maps without names; organizing competitions; linking theory with daily life; assigning projects and performance tasks about maps; using computer technologies effectively; organizing school trips; and creating opportunities for peer learning. The suggestions made by the teachers to help improve students' map skills are supported by other research as well. The relevant literature advises holding activities relevant with students' surroundings, daily routines, and most favorite activities. For instance, students may draw their rooms and the positions of the furniture in their rooms into a simple sketch book; they can draw the route they use from their home to school or to a market; or they can employ sketches, plans, or maps while trying to find some missing objects in dramas, tales, and stories told during trips and strolls to become more familiar with the school and its environment (Bahar et al., 2010; Bailey & Fox, 1996; Demiralp, 2009; Sönmez & Aksoy, 2012; Weeden, 1997). Moreover, jigsaw puzzle maps can be prepared on a wide variety of different topics (Bircan & Safran, 2013), map games can be played (Bircan & Safran, 2013; Klonari, 2012; Sönmez & Aksoy, 2012), maps without names can be utilized, maps in current books, newspapers, and periodicals can be brought to the class (Bircan & Safran, 2013; Kızılçaoğlu 2007; McClure, 1992). Furthermore, research has brought out the significance of using digital maps, animations, satellite images, aerial photos, computers, the Internet, and alternative technologies in turning abstract issues into concrete ones (Aksoy & Ünlü, 2012; Aktürk et al., 2013; Bednarz, 2004; Bircan & Safran, 2013; Demiralp, 2006a; Lee & Nednarz, 2009; Özcan, 2008; Öcal, 2009; Westhuizen et.al., 2010). Recently, many studies have focused on "peer learning" and how this can be achieved in a Social Studies course (Child to Child, 2009; Deveci & Ay, 2014). Along with helping students enjoy their time together, play games, hold group activities, and feel beneficial and self-important by fulfilling assigned duties, this approach may also be influential in improving students' map skills. Teachers have to be well-trained in order to realize all these. In several studies, while is has been found that history teachers in particular to know little about using maps during the teaching/learning process, to have problems using maps, a strong correlation has also been found between students' map skills and teachers' map skills (Bal & Yiğittir, 2012; Bircan & Safran, 2013; Zaman et al., 2011). The fact that most of the participants are graduates of either History or History Teaching departments is also worth noting in this sense. As suggested by the teachers, it may be helpful for students' map skills to make use of maps not only in their Social Studies course, but also in other courses. Relevant research has indicated that maps should not be considered as only geographical materials, and that retention would increase if they are employed in students' History, and History of Revolution, and Ataturk courses (Bircan, 2013; Bircan & Safran, 2013; Demirezen & Akhan, 2011; Zaman et al., 2011). Therefore, both teacher candidates and teachers should be trained on both which methods and techniques to use and how to use them during the teaching of map skills, how to make use of technological tools and materials, and how to prepare their own visuals and maps by using GIS (Demiralp, 2006a; Öcal, 2009) through in-service trainings. According to Ünal (2012), "improving one's qualities and competence is a must for each teacher. Each teacher should present a certificate to the administration every other year showing that s/he has attended a program of his/her own interest in order to renew/develop him/herself. Teacher Training institutions within higher education should organize Certificate Programs to Improve Teachers' Qualities." The following can be taken as the last words based on the research.

- Reasons as to why students have different levels of map skills should be investigated in detail.
- Different studies displaying the effectiveness of the Social Studies Instructional Program in improving students' map skills should be conducted.
- The Social Studies Course Instructional Program should offer various examples aiming to improve students' map skills in different learning fields and units.
- Social Studies course books and teachers' books should help improve students' map skills.
- The influence of different methods and techniques over students' map skills should be determined.
- Schools' infrastructure should be updated and upgraded, and separate studies investigating the influence of schools' infrastructure over students' map skills should be designed.
- In-service training programs should be conducted in order to help teachers complete their inadequacies in preparing and using maps and in technologies, such as GIS, Google Earth, and Google Map.

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