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PRIMARY SCHOOL STUDENTS' ACADEMIC ACHIEVEMENT IN SOCIAL STUDIES: A STRUCTURAL EQUATION MODELING ANALYSIS

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Abstract

The aim of this study is to determine the learner characteristics that have a significant effect on academic achievement in social studies lessons. For this purpose, the study process was modeled as relational scanning as a quantitative research approach. Relevant literature and observations were used and a research model was created based on the variables that were thought to affect the academic achievement of students in a social studies course. In order to test the created model, data were obtained from 145 students in the 4th grade by using different measurement tools. The data obtained were analyzed using confirmatory factor analysis and path analysis techniques. According to the results obtained in this study, the variables in the research model explained 63% of the academic achievement of the students in this social studies course. In addition, it was determined that students' attitudes toward social studies lessons, their interest, and the importance they attached to the course were the most important variables that affected their achievement, while a teacher-centered teaching environment directly and negatively influenced students' achievement. Suggestions that can be used in the design and preparation of an effective and efficient learning environment for social studies courses are presented.

Keywords: Academic achievement, Primary school, Social studies, Structural equation model.

INTRODUCTION

The quantitative dimension of the knowledge acquired by students in a learning environment can be defined as academic achievement. In this context, it can be said that academic achievement is the potential success achieved by students as a result of learning. Academic achievement is considered very important by teachers and families as it enables students to prepare for their future professional and social lives and it shapes their futures (Bahçetepe & Giorgetti, 2015; Sarıer, 2015). On the other hand, academic achievement is also accepted as an indicator of the effectiveness of education systems (Moss & Moss-Racusin, 2021; Rodríguez, Tinajero, & Páramo, 2017; Uzun & Çokluk-Bökeoğlu, 2019). Therefore, it is very important to determine how to increase the academic achievement of students and how to eliminate their failures in terms of improving education systems, increasing the efficiency of education, and ensuring the satisfaction of teachers, students, and parents.

Theoretical Background of the Study

Academic achievement is the level of performance reached by a student in the learning environment (Moss & Moss-Racusin, 2021). However, although academic achievement is a basic indicator in the learning environment, it is affected by the student, who is the owner of success, and by the environment and many variables originating from the environment that shape this success. Researchers have stated that a student's academic achievement is related to three main factors: school, family, and student characteristics (Akbaba, 2006; Bahçetepe & Giorgetti, 2015; Engin-Demir, 2009;

Rozan, 1987; Sarıer, 2015). The characteristics of the school and its environment, which are among these main factors, constitute the formal environment in which the student realizes his or her learning experiences. In this context, the quality of the learning-teaching process is related to the school and its environment. Therefore, it is expected that the characteristics of the school and its environment will affect the academic achievement of the students because the quality of the school is an important factor that determines the experiences students will have in the learning process. The school atmosphere (Bahçetepe & Giorgetti, 2015; Zysberg & Schwabsky, 2020), interpersonal relationships and the sense of belonging at school (Zysberg & Schwabsky, 2020), school culture, teacher behaviors, and school principal leadership (Idris, Hussain, & Ghaffar, 2021; Sarıer, 2015) were seen to be directly related to the success of students and affect their success. However, different characteristics such as the environment in which the school is located and the teaching opportunities it provides, the teacher's professional competencies, and the number of students in the classroom also affect student achievement (Benbenishty et al., 2016; Cheema & Kitsantas, 2014; Engin-Demir, 2009; Kalemoğlu-Varol & İmamoğlu, 2014; Özkan, 2020; Sakiz, 2017). It can be said that the teacher, the teaching opportunities, the school, and the administrative structure of the school and its environment affect the quality of the education that the student will receive and his or her academic achievement.

The socioeconomic status, sociocultural characteristics, and educational expectations of families shape the entire educational life of students. In this context, the opportunities and educational support provided to students by their families may vary according to their socioeconomic and cultural characteristics. Therefore, it is expected that the socioeconomic status and expectations of the family will affect the academic achievement of students. The economic situation of the family (Pinquart & Ebeling, 2020; Sarıer, 2015; Turan & Koldere-Akın, 2019; Liu, Peng, & Luo, 2020; Uzun & Çokluk-Bökeoğlu, 2019), parents' expectations of their children (Pinquart & Ebeling, 2020), parenting styles (Garg, Levin, & Tremblay, 2016), the mother and/or father's educational status (Rodríguez, Tinajero, & Páramo, 2017; Sarıer, 2015; Suphi & Yaratan, 2012; Waters et al., 2021), the educational support provided by the family (Bayramdurdyyeva, 2019), and the number of children in the family (Turan & Koldere Akın, 2019) were seen to be directly related to students' achievement. In short, it can be said that the physical, economic, and cultural structure of the family affects the educational process of the student and his or her academic success throughout that educational process.

Although it is affected by different features such as the academic achievement of students, the school, and families, the learning process is largely a result of student performance (Moss & Moss-Racusin, 2021). Therefore, the individual characteristics that determine a student's performance are related to his or her academic achievement. Walberg (1981) classified the individual characteristics that affect a student's performance on psychological grounds as cognitive, affective, and behavioral and stated that these characteristics were related to academic achievement. Students' studying styles (Bahar & Okur, 2018), studying habits (Bayramdurdyyeva, 2019; Sarıer, 2015; Sayın & Gelbal, 2014), experiences in the learning environment and approaches to learning (Karagiannopoulou & Milienos, 2015), perceptions of self-competence (Sarıer, 2015; Suphi & Yaratan, 2012; Zysberg & Schwabsky, 2020), emotional status, gender, prior knowledge level (Rodríguez, Tinajero, & Páramo, 2017), motivation, self-esteem and attitude toward the lesson (Sarıer, 2015), self-confidence and time management (Bayramdurdyyeva, 2019), academic risk-taking and fear of negative evaluations (Uzun & Çokluk-Bökeoğlu, 2019), in-class participation (Sayın & Gelbal, 2014), and emotional intelligence (Garg, Levin, & Tremblay, 2016) were all seen to be directly related to success and have an effect on academic achievement. On the other hand, it is emphasized that students' intelligence, interests, learning and cognitive styles, learning speeds, and personality traits also affect their academic achievement (Cevher & Yıldırım, 2020; Krapp, 2002; Lin, Hong, & Chen, 2013; Sarıer, 2015; Sujito & Muttaqin, 2020; Şevik, 2014; Şimşek, 2017; Wang, 2004). In light of these studies, it is seen that the characteristics that affect the academic achievement of students generally include cognitive aspects such as intelligence, prior knowledge level, learning style, and cognitive style; affective aspects such as interest, attitude, importance given to learning, and motivation; and behavioral aspects

such as participation in the lesson, study habits, and participation in out-of-school learning environments.

Although it is stated that academic achievement is generally affected by three basic sets of variables, originating from the school, family, and student, it is emphasized that the most important factors determining a student's academic achievement are the individual characteristics originating from the student (Hattie, 2009; Sarıer, 2015). Each student has a different genetic structure and different life experiences. This means that each student participates in the learning environment as an individual with different characteristics and the cognitive, affective, and behavioral characteristics originating from students are the main variables that enable us to understand why some students have no difficulties during the teaching process while some students have difficulties and fail (Bempeni & Vamvakoussi, 2015; Jonassen & Grabowski, 1993). Therefore, knowing the cognitive, affective, and behavioral characteristics of students and the relation of those characteristics with academic achievement may allow us to eliminate the reasons for failure and support the success of students. At this point, it can be said that individual characteristics that can be controlled in the learning-teaching process and be used in the preparation of that process are more important than factors that also affect the academic achievement of students but are difficult to change, such as school or family.

The main cognitive features that affect academic achievement are prior knowledge, which encompasses students' previous learning; cognitive styles, which are defined as individual differences in the strategies used in processing information and transferring it to the learning environment (Plass & Pawar, 2020; Sujito & Muttaqin, 2020); and learning styles, defined as the preferred ways of receiving and processing information (Cevher & Yıldırım, 2020). Cognitive features such as prior knowledge, cognitive styles, and learning styles can be understood as variables that can be used concretely in the preparation and control of learning environments. On the other hand, the main affective characteristics that affect academic achievement are the attention given to lessons, which is defined as a student's attachment to and establishment of a relationship with the learning environment (Tekin & Eltioğlu, 2019); the importance given to lessons, defined as valuing and caring about the subject to be learned (Ceylan & Berberoğlu, 2007; Yılmazer & Demir, 2014); and attitude, or affective tendencies toward lessons (Kelley, 2021; Sarıer, 2015). Affective characteristics such as the importance given to lessons and the interest and attitude displayed do not change rapidly in the learning environment; in this respect, they can be used effectively in the preparation and control of learning environments, which is a process. Student-based features that affect academic achievement are affected by behavioral features as well as cognitive and affective features. The behavioral habits of students, such as their participation in activities in and out of the classroom, the way they study, the quantitative dimension of the time they allocate to the course, and their preferences in using resources to support the course all also affect academic achievement (Anderson, 2021; Bayramdurdyyeva, 2019; Ceylan & Berberoğlu, 2007). The behavioral characteristics of students are variables that can be configured more easily compared to cognitive and affective characteristics. In this respect, they can be used effectively in the preparation and control of learning environments.

The characteristics that affect the academic achievement of students may differ according to their cognitive, affective, and behavioral characteristics, and the effects of these variables may also vary for different courses and subjects. Each course or subject has its own characteristics and students' approaches and tendencies for each lesson may also differ. For this reason, it is normal for the academic achievement of students to differ according to courses. Therefore, analyzing the characteristics related to the specific academic achievements of students, rather than general academic achievement, can give more meaningful results. For example, some studies in the literature have explored the characteristics that affect the academic achievement of students in science and mathematics courses (Ceylan & Berberoğlu, 2007; Ertürk & Erdinç-Akan, 2018; House, 2006; Koballa & Glynn, 2004; Ölçüoğlu & Çetin, 2011; Savaş, Taş, & Duru, 2010). However, many lessons are conducted in teaching and each lesson has its own features. It can accordingly be said that there is

a need for studies that analyze the characteristics that affect the academic achievement of students in courses other than science and mathematics.

While the characteristics that affect students' academic achievement may vary according to courses, different learner characteristics at different education levels will also affect their academic achievement. In the literature, some studies were conducted to analyze the variables that affected the academic achievement of students in primary school (Ertürk & Erdinç-Akan, 2018), middle school (Ceylan & Berberoğlu, 2007; Engin-Demir, 2009; Ertürk & Erdinç-Akan, 2018; Ölçüoğlu & Çetin, 2011; Savaş, Taş, & Duru, 2010; Uzun & Çokluk-Bökeoğlu, 2019; Zysberg & Schwabsky, 2020), secondary school (Zysberg & Schwabsky, 2020), and the undergraduate level (Bahar & Okur, 2018; Bayramdurdyyeva, 2015; Garg, Levin, & Tremblay, 2016; Karagiannopoulou & Milienos, 2015; Sayın & Gelbal, 2014; Suphi & Yaratan, 2012; Rodríguez, Tinajero, & Páramo, 2017; Turan & Koldere-Akın, 2019) from different perspectives. In this context, it is seen that limited studies have been performed, particularly at primary and secondary education levels. Primary school has a special place in the educational process because the knowledge, skills, and attitudes acquired in primary school largely affect the success of students in their later learning life (Yaşar, Sözer, & Gültekin, 2000) and form the basis for preparing them for the tasks they will be responsible for in adulthood (Ersoy, 2006).

Therefore, analyzing the characteristics of primary school students that affect their academic achievement is very important for both their future education and their success in adulthood. It is necessary to design lessons that reflect the nature of primary school while analyzing the student characteristics that affect the academic achievement of primary school students. In primary school, lessons and life itself are integrated in accordance with the principle of collective education (Kaya, 2018). Primary school social studies lessons have a very important role here. Social studies is one of the few subjects that include the principle of collective education, which is the basic teaching approach of primary school (Gültekin & Burak, 2019). Therefore, analyzing the features that affect the academic achievement of students in social studies courses can also allow inferences about other teaching processes in primary school.

Aim and Importance of the Study

In this study, it was aimed to determine the learner characteristics that have a significant effect on academic achievement in social studies lessons. In studies on student achievement, factors affecting success should not be considered independently of each other (Uzun & Çokluk-Bökeoğlu, 2019). Thus, based on the literature and observations, a conceptual research model was created in which the variables thought to be effective on the academic achievement of students in primary school social studies lessons were associated with each other and with academic achievements. The created conceptual research model was analyzed with structural equation modeling techniques. The variables that affect the academic achievement of students in social studies lessons were accordingly discovered and evaluated, and cause-and-effect relationships were established in a holistic manner. In this study, in general, answers were sought to the following research question: "What are the characteristics of the learner that significantly affect academic achievement in social studies teaching?" This study is considered to be important for being conducted at the primary school level for social studies lessons in the context of learner characteristics, which are thought to be important for academic achievement, and the results of the study are expected to help primary school and social studies teachers prepare more effective and efficient learning environments.

METHOD

Research Model

In this study, it was aimed to determine the variables that affect the academic achievement of primary school 4th grade students in a social studies course. In line with this purpose, it was necessary to analyze the relationship between academic achievement and the variables affecting it from multiple perspectives. The study was carried out in the form of a relational scanning model as a quantitative

research approach. Relational scanning models are correlational research conducted to determine the relationships between two or more variables and to obtain clues about cause and effect (Büyüköztürk et al., 2014). In this study, based on the literature, a conceptual research model was created in which variables thought to be effective on academic achievement in the social studies course were associated with each other. The conceptual research model is illustrated in **Figure 1** below. In addition, research hypotheses were determined to test the effects of the learner characteristics predicted in the conceptual research model on success. The determined hypotheses are provided below.

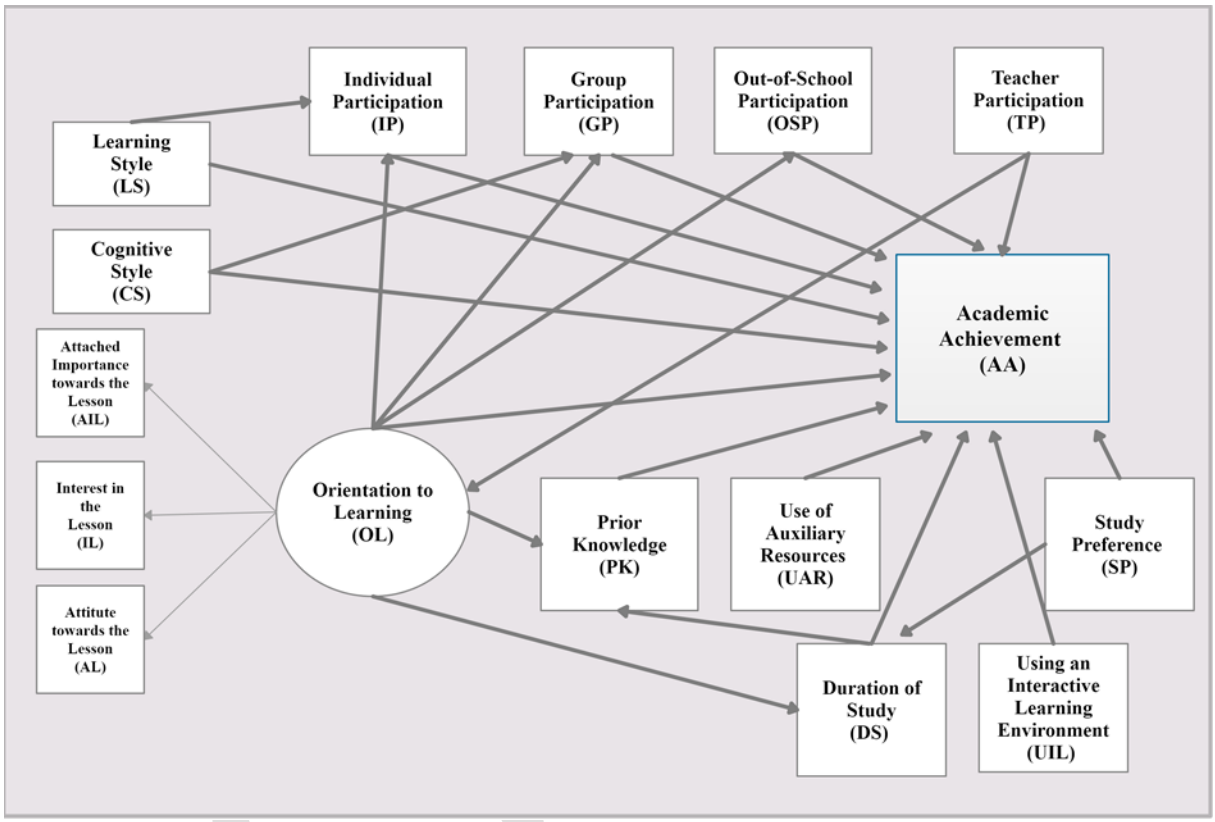

Figure 1. Conceptual research model

In previous studies in the literature, the learner's cognitive styles (Chrysafiadi & Virvou, 2013), learning style (Güngören, 2015; Özyurt, 2013), interest in the lesson (Ceylan & Berberoğlu, 2007), pre-knowledge level (Abulla-Ahmet, 2017; Güngören, 2015), attitude toward learning the subjects of the lesson and importance attached to the lesson, and participation in classroom and out-of-class learning activities (Webster & Fisher, 2000), as well as the teacher's participation in the learning process (Ceylan & Berberoğlu, 2007), were determined as variables effective on achievement. The variables specified in the literature are directly associated with academic achievement in the structural and conceptual research model presented in Figure 1 (PK → AA, TP → AB, LS → AA, and CS → AA). In this model, the variable of learner participation in in-class and out-of-class learning activities was defined as the three different specific variables of individual, group, and out-of-school participation (IP, GP, and OSP). This is because the variable of participation in the learning process as typically defined in the literature is a very general and abstract variable shaped by variables of participation in individual, group, and out-of-school learning environments. Thus, efforts were made to test the effect of variables on achievement at lower dimensions that define students' participation in the learning process. The subdimensions of the learning process participation variable were defined and directly associated with academic achievement (IP → AA, GP → AA, and OSP → AA). On the other hand, since the variables of interest, attitude, and importance attached to the learning process include affective processes, it was not thought possible to use them in the design and preparation of

learning environments alone. For this reason, a new latent variable was defined as orientation to learning by combining the relevant variables (OL → AIL, IL, AL). Thus, a general variable was defined and associated with academic achievement (OL → AA). In addition, based on observations made in the learning-teaching process, variables such as the use of auxiliary resources, duration of study (weekly estimated course hours), study preferences (planned or flexible), and use of an interactive learning environment were thought to have a direct effect on academic achievement. For this reason, the stated variables were directly associated with academic achievement in the conceptual research model (UAR → AA, DS → AA, SP → AA, and UIL → AA).

The preferences of students with different cognitive styles for independent or group work may change and may affect participation in individual learning environments together with learning style (Erden & Akman, 2001). In this context, the variables specified may affect academic achievement indirectly. For this reason, cognitive styles were associated with individual and group participation variables in the learning process, whereas learning styles were associated with the individual participation variable in the learning process (CS → IP, CS → GP, and LS → IP). In addition, since the learning orientation variable includes affective features that can mobilize the learner, it was thought that it could affect academic achievement through the variables of individual and group participation in the learning process, participation in out-of-school learning environments, and study duration. The learning orientation variable was therefore associated with these stated variables (OL → IP, OL → GP, OL → OSP, OL → PK, and OL → DS). From another point of view, it was thought that study preference (planned or flexible) could affect academic achievement through the course study duration variable and study duration through the prior knowledge variable. Study preference and duration of study were therefore associated in the conceptual research model, as were the duration of study and prior knowledge variables (SP → DS and DS → PK). In order to test the conceptual research model, hypotheses were created based on the model and the literature, as follows:

- H_1: In social studies lessons, individual participation in the learning process has a significant effect on academic achievement.
- H_2: In social studies lessons, participation in the learning process with the group has a significant effect on academic achievement.
- H_3: In social studies lessons, participation in the out-of-school learning process has a significant effect on academic achievement.
- H_4: In social studies lessons, the teacher's participation in the learning process has a significant effect on academic achievement.
- H_5: In social studies lessons, orientation to the learning process has a significant effect on academic achievement
- H_6: In social studies lessons, prior knowledge has a significant effect on academic achievement.
- H_7: In social studies lessons, cognitive styles have a significant effect on academic achievement.
- H_8: In social studies lessons, learning styles have a significant effect on academic achievement.
- H_9: In social studies lessons, study preference has a significant effect on academic achievement.
- H_{10}: In social studies lessons, study duration has a significant effect on academic achievement.
- H_{11}: In social studies lessons, the use of auxiliary resources has a significant effect on academic achievement.
- H_{12}: In social studies lessons, the use of an interactive learning environment has a significant effect on academic achievement.

Sample

A sampling technique was used to determine the school and the students from which data would be collected. In this phase, criterion sampling, one of the purposeful sampling techniques, was used to determine the school and the students for the sample. Criterion sampling takes the study of all situations that meet a predetermined set of criteria as its basic understanding. The criteria can be determined by the researcher or according to a previously prepared list (Yıldırım & Şimşek, 2013). In this context, the criteria were that the school represent the general environment in terms of sociocultural and socioeconomic aspects and that there be 150-200 students in the 4th grade at the school. In the literature, it is stated that the sample size should include 150-200 participants in order to test the model proposed at this stage (Özdamar, 2016). Thus, the criterion sampling technique was used in determining the school where data would be collected; however, rather than taking samples of students in the school, an effort was made to reach the whole universe.

A school that met the criteria was identified and data were obtained from 161 students in the 4th grade of this school, who were studying in five different classes. However, as data were collected from these students at different points of time, it was possible for participants with data loss to directly affect the analysis. Therefore, the participants with missing data were excluded from the study. In addition, some participants were excluded from the sample to fill the assumptions required by the analysis (missing data, single and multiple outliers). As a result, 145 of the students whose data had been collected constituted the sample of this study. Information about these students who formed the sample in the design phase of the study is given in Table 1 below.

Table 1. Information about the students forming the sample

Dimensions	n	Subdimensions	f	%
Class	145	4/A	28	19.3
		4/B	29	20.0
		4/C	29	20.0
		4/D	32	22.1
		4/E	27	18.6
Study Preference for Social Studies Lessons	145	Planned	104	71.7
		Flexible	41	28.3
Study Duration for Social Studies Lessons (Weekly)	145	Never	10	6.9
		1-3 hours	83	57.2
		4-6 hours	44	30.3
		7+ hours	8	5.5
Taking Private Courses in Social Studies	145	Yes	5	3.4
		No	140	96.6
Use of Auxiliary Resources (test books, lectures, training sets, etc.)	145	Yes	112	77.2
		No	33	22.8
Use of Interactive Learning Environments (Morpa Kampüs, Vitamin, training CDs, etc.)	145	Yes	78	53.8
		No	67	46.2
Dominant Learning Style of the Student (measured by the Verbal-Visual Learning Styles Scale)	145	Verbal	48	33.1
		Visual	97	66.9
Cognitive Style of the Student (measured by the Group Embedded Figures Test)	145	Field-dependent	74	51.0
		Field-independent	71	49.0
Social Studies 2018-2019 Fall Semester Grade	145	Average of 88.9, ranging from 55 to 100		
Social Studies Academic Achievement Level (measured by Academic Achievement Test)	145	Average of 19.1, ranging from 6 to 30		
Age group	145	8-11 years old		

Data Collection Process and Tools

In this study, quantitative data were obtained by using different measurement tools. The data collection process was carried out periodically and gradually under the supervision of the researcher. In order to match the data collected at different times during the data collection process with their sources, students were asked to write their name and surname, number, and class information on the relevant forms; it was explained that this information would not be shared. The data collection tools with which the study data were obtained are explained below, respectively.

Academic Achievement Test (AAT)

In order to measure the achievement of 4th grade students in a social studies course, the AAT developed by Burak (2020) was used. Data were obtained in the fall semester of the 2018-2019 academic year using the AAT. It contains 30 items, 27 of which are multiple-choice and 3 of which are open-ended, for the five outcomes of the "Science, Technology, and Society" unit of the primary school social studies curriculum. The item discrimination index (rj) of the items of the ATT ranges from .30 to .74, while the item difficulty index (pj) ranges between .20 and .83. In addition, the average discrimination (r) of the test was found to be .47 and the difficulty (p) was calculated as .61. The KR-20 value for the reliability of the test was calculated as .86 and the correlation value of the scores obtained after the test-retest application was calculated as .81. In the present study, the KR-20 value was found to be .83. In the scoring of the AAT, correct answers are scored with 1 point and wrong answers with 0 points. The scoring key prepared by Burak (2020) was used to score the open-ended questions. The academic achievements of the students were determined with the scores obtained using the AAT, and these academic achievement scores were used as dependent (internal) variables in the conceptual research model.

Verbal-Visual Learning Styles Scale

The Verbal-Visual Learning Styles Scale developed by Burak (2020), whose validity and reliability were previously analyzed, was used to determine the learning styles of these primary school students. The scale is a 4-point Likert-type measurement tool ("completely not suitable," "not suitable," "suitable," "completely suitable") consisting of 12 items, with 6 for verbal and 6 for visual learning styles. The scale has a two-dimensional and two-factor structure with no reverse-scored items. The alpha coefficient of the visual learning dimension is .74 and that of the verbal learning dimension is .76. The correlation value of the scores obtained in the test-retest application to determine the reliability of the scale over time was calculated as .83 for the visual learning dimension and .74 for the verbal learning dimension. In this study, the alpha coefficient of the scale's verbal learning dimension was calculated as .77 and that of the visual learning dimension as .79.

In the scoring of the scale, items related to visual learning style and items related to verbal learning style are summed separately. The lowest score is 6 and the highest is 24 points for both visual learning style and verbal learning style. A higher score in one dimension means that style and its related items are dominant. Thus, the dominant learning styles of primary school students are determined. Using the Verbal-Visual Learning Styles Scale, the learning styles of the participating students were determined, and the determined styles were then used as an independent (external) variable in the conceptual research model.

Group Embedded Figures Test (GEFT)

In this study, the GEFT developed by Witkin et al (1977) and adapted to Turkish by Okman-Fişek (1979) was used to determine the cognitive styles of 4th grade students. First, written permission to use the tool was obtained from Okman-Fişek (1979), who had developed the Turkish form of the test, via email. This measurement tool consists of 25 shape questions presented in three sections. The first seven questions serve as exercises and are excluded from the evaluation. The remaining 18 questions are divided into two sections consisting of nine questions each. In the application of the measurement tool, 11 minutes are given for the second and third parts. Answers are scored by giving 1 point for each correct answer and 0 points for each mistake. A total of 18 points can be obtained from this tool. If the score is higher than the relevant group average, it is evaluated as field-independent, while a

lower score is considered to reflect the field-dependent cognitive style. In score calculation, the average of each class was evaluated alone and the field-dependent/field-independent grouping was performed alone accordingly. In order to ensure better separation of students in terms of class dynamics and to evaluate students in their own contexts, the class average was used instead of a general average. The KR-20 value was calculated to estimate the reliability of the data obtained with the GEFT. As a result of those calculations, the KR-20 value was .83. The cognitive styles of the students were determined with the data collected by the GEFT. The determined cognitive styles were used as independent (external) variables in the conceptual research model.

Social Studies Active Learning Scale

The Social Studies Active Learning Scale, which was developed by Burak (2020) and the validity and reliability of which were tested, was used to determine the attitudes of primary school students toward social studies lessons. The scale consists of two dimensions and seven factors. The first dimension of the scale is "Active Learning," while the second dimension entails "Orientation to Learning-OL" and "Participation in Learning-PL." The dimensions of the scale include the following subfactors: "Individual Participation in the Learning Process-IP," "Group Participation in the Learning Process-GP," "Participation in the Out-of-School Learning Process-OSP," "Teacher Participation in the Learning Process-TP," "Interest in the Lesson-IL," "Attached Importance towards the Lesson-AIL," and "Attitude towards the Lesson-AL." This measurement tool is a 4-point Likert-type scale ("Never," "Sometimes," "Often," and "Always") and it consists of 30 items. One item is reverse-scored.

The alpha coefficient was calculated to determine the reliability of the subdimensions and the whole of the Social Studies Active Learning Scale. According to those calculations, the dimensions that form the scale have coefficient values as follows: "Individual Participation in the Learning Process," .63; "Group Participation in the Learning Process," .77; "Participation in the Out-of-School Learning Process," .77; and "Teacher Participation in the Learning Process," .66. A new dimension was formed by these dimensions. "Participation in Learning" had an alpha value of .84. The alpha coefficients of the other dimensions of the scale were calculated as .80 for "Interest in the Lesson," .78 for "Attached Importance towards the Lesson," .75 for "Attitude towards the Lesson," and .86 for "Orientation to Learning," the latter being formed by the combination of the former dimensions. The alpha coefficient of the whole scale was calculated as .88. With this scale, the latent variables thought to be effective on academic achievement in social studies lessons were defined and the effects of those latent variables on achievement were tested. The subdimensions of the developed scale were accordingly used as external (independent) and moderator variables in the created and tested conceptual research model.

Personal Information Form

In order to analyze the personal features that have significant effects on academic achievement in social studies lessons, study habits that can affect students' achievement were determined. An information form was prepared by the researcher to be used in the current study. This form included questions about the use of auxiliary resources and interactive learning environments in social studies lessons, students' study preferences for social studies, and the average study time devoted by students to this course. In addition, students' social studies grades from the fall semester of the 2018-2019 academic year were used as a data source to determine their prior knowledge levels. The data obtained in this process were added to the Personal Information Form.

Data Analysis

Structural equation modeling (SEM) analysis techniques were used to analyze the conceptual research model created in this study. SEM is a multivariate statistical technique that enables the establishment of cause-and-effect relationships between large numbers of latent and observable variables (Karagöz, 2017; Özdamar, 2016). For the analysis of the data obtained in the study, the dataset was first reviewed and prepared. In the preparation phase of analysis, first of all, missing data and outliers should be taken into account to increase the efficiency of the analysis results of quantitative data (Çokluk, Şekercioğlu, & Büyüköztürk, 2016). This is because missing data and outliers have

increasing effects on error variance and statistically decrease the power of analysis (Osborne & Overbay, 2004). For this reason, in the first stage, the average assignment technique was used to eliminate missing data so that they would have less effect on the variances. One-way and multidirectional outliers were then determined. Standard Z values were calculated by using the total scores of each measurement obtained from the data collection tools to determine one-way outliers. All scores analyzed in terms of one-sided extreme values should be within a distance of ±3 standard deviations from the mean (Karagöz, 2017). It was seen that the scores for each measurement were in the range of ±3. Accordingly, it was decided that there were no one-way outliers. Moreover, multiple outliers were controlled by Mahalanobis distance ($p<.001$). In preparation for the analysis, 16 participants who were determined to have generated one-way and multiple outliers with excessive lost data were removed from the dataset and the analyses began with the data obtained from 145 participants.

In the analysis phase, the dataset was first analyzed in terms of univariate and multivariate normal distribution. In order to analyze univariate normal distribution, the skewness and kurtosis coefficients of each variable in the conceptual model were calculated. According to these calculations, the coefficient of skewness varied between -1.67 and 1.65 and the kurtosis coefficient varied between -1.99 and 2.23. Kline (2010) stated that the skewness and kurtosis coefficients should respectively not exceed values of |3.0| and |10.0|. Accordingly, it can be said that the dataset satisfied the univariate normality assumption. For the multivariate normality assumption, Mardia's normalized multivariate kurtosis coefficient was calculated. This Mardia coefficient was between -6.668 and 5.372 for the subvariables and 12.234 for all variables (multivariate). Karagöz (2017) stated that kurtosis values greater than 5, 10, or 20 are critical values for multiple normal distribution. Kline (2010), on the other hand, suggested that values above 8 do not satisfy the assumption of multiple normal distribution, values larger than 10 are problematic, and values above 20 are serious problems for multiple normal distribution. Raykov and Marcoulides (2008), however, stated that the number of variables in a model is a determining criterion for multiple normal distribution and suggested that the critical value be calculated with the formula $p\times(p+2)$ (p: number of observed variables) to analyze the Mardia coefficient in terms of multiple normal distribution. Considering that there are 13 observed variables in the conceptual model in this study, it can be said that the calculated kurtosis coefficient is acceptable in terms of critical values for multiple normal distribution.

A conceptual hybrid model was created to be tested in the study. In other words, in this model, a large number of external and internal variables are used together. Therefore, the data were analyzed using confirmatory factor analysis (CFA) and path analysis together. With CFA, the fit of observable variables explaining some latent variables in the model was analyzed and, according to the obtained results, modifications were made to the model in accordance with the theoretical framework. In these modifications, the relationship paths that were not predicted in the conceptual model were defined and their significance in the model was analyzed. In addition, the path coefficient (regression value, β) and the t value expressing the significance of this correlation coefficient were taken into consideration in determining the variables that affect achievement ($p<.05$). The variables that did not have a significant relationship in the research model were excluded from the analysis hierarchically according to the degree of meaninglessness and the model was analyzed repeatedly.

In order to confirm the fit of the model, root mean square error of approximation (RMSEA) and standard mean square root of residuals (SRMR) functions were used. These indicators are based on the structural similarity function and they should be used for an effective evaluation; all other criteria are auxiliary (Özdamar, 2016). In addition, the ratio of chi-square to degrees of freedom (χ^2/df) was used as another criterion to determine the fit of the model. In the evaluation of the model, the incremental fit index (IFI) and comparative fit index (CFI), which are widely used in the literature, were also taken into consideration. The criteria and value ranges taken into consideration while determining the fit of the model are given in Table 2.

Table 2. Model fit criteria and value ranges (Özdamar, 2016, pp. 185-186)

Fit Criterion	Ideal Fit	Good Fit	Acceptable Fit
χ^2	p>.10	.05<p<.10	p<.05
χ^2/df	≤2.00	2.00-5.00	-------
RMSEA	0-.05	.05-.08	-------
SRMR	0-.05	.05-.08	-------
CFI	1.00	.95-1.00	.90-.94
IFI	1.00	.95-1.00	.90-.94

The path coefficient was used to determine the significance levels of variables that were significant for achievement in the research model. The path coefficient (β) was determined using the standardized values of the coefficients that directly or indirectly predicted academic achievement, which is the internal variable in the model, and the sum of these values. In addition, in the evaluation of the effect of the path coefficient, the criteria specified by Kline (1998) were taken into consideration (values of .10 and below indicate small effect, values around .30 show medium effect, and values of .50 and above indicate a large effect). According to these criteria, inferences were made about the total effect level of the significant variables that predict achievement. The SPSS and AMOS package programs were used for the analyses conducted in this phase.

Validity-Reliability

During the study process, quantitative research was carried out with the relational screening model. The degree of explainability of the changes observed in the dependent variable in quantitative studies with independent variables is defined as internal validity while the degree of generalizability of the results to the universe is defined as external validity and there are generally factors that threaten both internal and external validity (Büyüköztürk et al., 2014). The following procedures were carried out to ensure the validity of the results obtained during the design phase:

- A conceptual research model was created to determine the learner characteristics that affect the academic achievement of students in this social studies course. While creating a conceptual model, previous studies in the literature were taken into consideration and the independent variables whose relationships would be tested were determined accordingly. Thus, it was sought to increase the internal validity of the quantitative research carried out in this stage.
- In quantitative studies, sample size and selection are very important dimensions for validity (Büyüköztürk et al., 2014). In the design phase of the study, the sample was determined according to certain criteria by considering the next stages of the research (application and evaluation). In addition, in this process, the sample size was determined by considering the number of participants specified in the literature. Thus, it was sought to increase the internal and external validity of the quantitative research conducted in this stage.
- During the data collection process, data were collected by giving the same scale forms to the participants at the same time. Distribution of the scale forms and the data collection process were completely carried out by the researcher. The researcher made the necessary explanations to participants during the data collection process and informed them.

In this study, quantitative data were obtained using different measurement tools. The validity of quantitative data can be expressed as the ability of the data obtained with the measurement tool to be used for the intended purpose (Özdamar, 2016). The most important factor ensuring the validity of quantitative data is the validity of the quantitative data collection tools. The validity of the quantitative data collection tools used in this study was demonstrated statistically in previous studies.

Reliability of quantitative data is the accurate and complete measurement of what is intended to be measured, free from accidental errors (Özdamar, 2016). In this context, it can be said that the most important factors ensuring the reliability of quantitative data are the measures taken during the data collection process. During the data collection process, the researcher accompanied the participants; thus, efforts were made to minimize the errors that may arise from the environment, data collection

time, and data collection tools. In addition, the researcher paid attention to collecting data from all of the participants at the same time and within the same period. Efforts were also made to gather gradually collected data from different groups at the same time and in the same period.

The reliability of the data obtained with the quantitative data collection tools used in this study was also demonstrated statistically; the Cronbach alpha and KR-20 coefficients were calculated according to the type of measurement tool for these operations. The lower limit for reliability in calculations was set as .60 (Özdamar, 2016). In this context, it was observed that the reliability of the data collected by the quantitative measurement tools was high.

Three short-answer open-ended questions are included in the AAT, one of the measurement tools with which quantitative data were collected. The quantitative data collected in this stage were scored according to the answer key prepared by Burak (2020). In the evaluation of the data obtained by this test, it was ensured that two experts, apart from the researcher, scored the results independently. The researcher and experts analyzed the open-ended questions according to the scoring key and completed the scoring by giving 1 point for correct answers and 0 points for wrong answers. The agreement between the raters was then tested with the Kendall W test (Özdamar, 2016). It was observed that the scores calculated in different stages of the research process showed high consistency (n=145, W=.903, p<.01). A pluralistic approach was used in the scoring and a score given by two of the three raters was accepted as final.

RESULTS

In this study, answers to the following question were sought: "What are the characteristics of the learner that significantly affect academic achievement in social studies teaching?" In order to find answers to this research question, research hypotheses that defined the conceptual model based on the literature were tested. These hypotheses were tested by hierarchical analysis of the quantitative data obtained during the research process (the tested hypotheses are presented in Table 3). After these tests, a research model was obtained in which variables that had a significant effect on academic achievement in social studies lessons were determined, which generally met the compliance criteria. This model is given in Figure 2 below (χ^2/SD=1.31, RMSEA=.044, SRMR=.071, CFI=.91, IFI=.92, R^2=.63).

Table 3. Results of the relationships between research model variables

Research Hypothesis	Relationship*	Direct Relationship (β)*	Indirect Relationship (β)*	Total Relationship (β)*	Decision
H_1: In social studies lessons, individual participation in the learning process has a significant effect on academic achievement.	IP → AA	.40	.30	.70	ACCEPT
H_2: In social studies lessons, participation in the learning process with the group has a significant effect on academic achievement.	GP → AA	.36	-	.36	ACCEPT
H_3: In social studies lessons, participation in the out-of-school learning process has a significant effect on academic achievement.	OSP → AA	-	.26	.26	ACCEPT
H_4: In social studies lessons, the teacher's participation in the learning process has a significant effect on academic achievement.	TP → AA	-.32	.60	.28	ACCEPT
H_5: In social studies lessons, orientation to the learning process has a significant effect on academic achievement.	OL → AA	-	.71	.71	ACCEPT

H_6: In social studies lessons, prior knowledge has a significant effect on academic achievement.	PK → AA	.42	-	.42	ACCEPT
H_7: In social studies lessons, cognitive styles have a significant effect on academic achievement.	CS → AA	-	.24	.24	ACCEPT
H_8: In social studies lessons, learning styles have a significant effect on academic achievement.	LS → AA	-	.19	.19	ACCEPT
H_9: In social studies lessons, study preference has a significant effect on academic achievement.	SP → AA	-	-	-	REJECT
H_{10}: In social studies lessons, study duration has a significant effect on academic achievement.	DS → AA	-	-	-	REJECT
H_{11}: In social studies lessons, the use of auxiliary resources has a significant effect on academic achievement.	UAR → AA	-	-	-	REJECT
H_{12}: In social studies lessons, the use of an interactive learning environment has a significant effect on academic achievement.	UIL → AA	-	-	-	REJECT

** $p<.05$*

As a result of the analysis, 8 of the research hypotheses that defined the relationships of other variables with academic achievement in the conceptual research model were accepted. It can be said that 63% of primary school 4th grade students' academic achievement in social studies lessons can be explained by the variables of individual participation in the learning process, group participation, out-of-school participation, teacher participation in the learning process, orientation to learning, prior knowledge, learning style, and cognitive styles.

When the results in Table 3 and the diagram in Figure 2 are analyzed together, the variables that affect academic achievement (AA) directly and positively are demonstrated, according to the effect value, to be prior knowledge (PK, β=.42, t=4.43), individual participation in the learning process (IP, β=.40, t=2.66), and group participation in the learning process (GP, β=.36, t=3.06). On the other hand, it was determined that the participation of the teacher in the learning process has a direct and negative effect on academic achievement (AA) (TP, β=-.32, t=-2.43). According to these results, the prior knowledge of the students and their individual and group participation in the learning process has a direct, positive, and moderate effect on their academic achievement in social studies lessons. In the same context, it was determined that teacher participation in the learning process negatively and moderately affects the academic achievement of students.

According to the results given in Table 3 and the diagram in Figure 2, it was seen that the out-of-school participation (OSP) variable indirectly affected academic achievement (AA) through the learning orientation (OL) variable (β=.26, t=2.89). In addition, the learning orientation (OL) variable indirectly affected academic achievement (AA) through the variables of individual participation in the learning process (IP) and group participation (GP) (β=.71, t1=4.81, t2=4.38). On the other hand, cognitive styles (CS), an external variable, indirectly affected academic achievement (AA) through the variables of individual (IP) and group participation (GP) in the learning process (in favor of the domain-independent style; β=.24, t1=3.10, t2=2.07). Another external variable, learning styles (LS), was seen to indirectly affect academic achievement (AA) through the variable of individual participation in the learning process (IP) (in favor of visual learning style; β=.19, t=4.81). At the same time, individual participation in the learning process (IP), one of the variables directly affecting academic achievement (AA), also indirectly affected academic achievement through the variable of prior knowledge (PK) (β=.30, t=5.52). The variable of teacher participation in the learning process (TP) also affected academic achievement (AA) indirectly through other variables that mediated the

learning orientation (OL) and out-of-school participation (OSP) variables (β=.26; t1=3.31, t2=3.29). According to these results, it was seen that students' learning styles, cognitive styles, participation in the out-of-school learning process, and orientation to the learning process had indirect, positive, and moderate effects on academic achievement in social studies lessons. In addition, it was observed that individual participation in the learning process, which directly and positively affects the academic achievement of students in social studies lessons, also positively and indirectly affects their academic achievement. On the other hand, teacher participation in the learning process, which directly and negatively affected the academic achievement of students in these social studies lessons, had a positive effect indirectly.

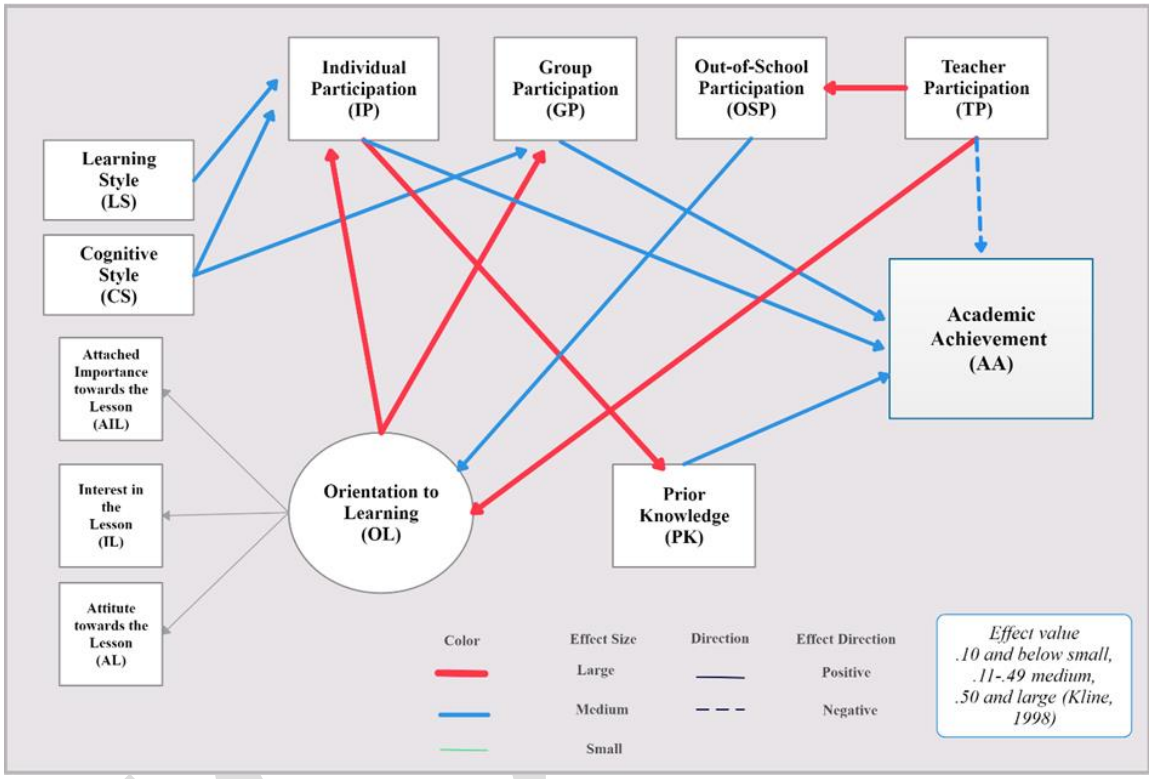

Figure 2. The accepted research model

When the results of the total effect value standardized on academic achievement as given in Table 3 are analyzed, it is seen that learning orientation (OL, β=.71) and individual participation in the learning process (IP, β=.70) are the variables with the highest effect value on academic achievement. It was thus determined that these variables are the most important variables that affect academic achievement in social studies lessons. When the direct and indirect effects were standardized and collected, the other variables affecting academic achievement (AA) were found to be prior knowledge (PK, β=.42), group participation in the learning environment (GP, β=.36), teacher participation in the learning process (TP, β=.29), participation in the out-of-school learning process (OSP, β=.26), cognitive styles (CS, β=.24), and learning styles (LS, β=.19). These listed variables affected academic achievement positively and moderately. Again, according to these results, it was found that students' orientation to the learning process was the most important factor affecting their academic achievement in social studies lessons; likewise, students' participation in the learning process had a high effect on their academic achievement in the relevant lesson. On the other hand, it was seen that students' prior knowledge, participation in the learning environment with the group, participation in the out-of-school learning process, cognitive styles, and learning styles and teachers' participation in the learning process in social studies lessons positively and moderately affected students' academic achievement.

DISCUSSION and CONCLUSION

According to the results obtained in this study, it was seen that in social studies lessons, the factors affecting academic achievement were affective states of the students, including their orientation to the lesson; their prior knowledge; their participation in the lesson individually, in groups, or in out-of-school learning environments; the role of the teacher in the learning-teaching process; and the students' learning styles. In this context, it was found that students' orientation to the lesson is the most important variable affecting their academic achievement.

The lesson orientation variable was defined in this study as the combination of the variables of interest in, attitude toward, and importance given to the course. In the literature, no studies were found testing the effects of variables defined as the combination of interest, attitude, and importance on academic achievement. In addition, there are no studies in the literature in which the interest and importance given to the course predict academic achievement in social studies. However, there are studies showing that students' attitudes in social studies lessons affect their academic achievement (Altıntaş, 2005; Ergin, 2006; Oğur, 2009, Öztürk, 1999; Tay & Akyürek-Tay, 2006; Yılmazer & Demir, 2014). The phenomenon of "importance" in the course orientation variable was associated with criteria such as giving priority to social studies lessons and paying attention in lessons. In the literature, Yılmazer and Demir (2014) concluded that students' prioritizing of and paying attention in social studies lessons positively affected their academic achievement. For the resultant lesson orientation variable, the phenomenon of "interest" was associated with criteria such as being curious about the subjects of social studies lessons and their interest to the subjects. In the literature, it is stated that interest and academic achievement are directly related (Kuzgun, 2017). As Laçin-Şimşek and Nuhoğlu (2009) explained, this may be due to the fact that students learn the topics they are interested in faster and more permanently and thus they become more successful. In this study, orientation to the lesson was defined as an affective learner characteristic. It is stated in the literature that affective characteristics are important variables that affect academic achievement (Duit & Treagust, 2003; Tuan, Chin, & Sheh, 2005). Therefore, the present study's finding that the lesson orientation variable is the most effective learner feature for academic achievement overlaps with the conclusions of some other studies in the literature on the effect of the components of this composite factor. However, the fact that the course orientation variable and its components are the most effective variables for academic achievement is a unique result of this study.

In this study, it was observed that students' participation in lessons individually, in groups, and in out-of-school learning environments positively affected their academic achievement. Students' participation in lessons individually, in groups, or in out-of-school learning environments can be defined as being active in the learning environment, and being active in the learning environment can be defined as engaging in learning activities. One of the most important prerequisites for the success of the student in social studies lessons is the active participation of the student in the learning process (Sarıtepeci & Çakır, 2015). The finding that students' participation in social studies lessons individually, in groups, or in out-of-school learning environments has a positive effect on their academic achievement can be explained by some previous studies in the literature. In the present study, it was seen that students' individual participation in the lesson has a more positive effect on academic achievement than participating in group or out-of-school learning environments. Academic achievement is an indicator reached at the end of the learning process. Learning is a process that the individual realizes in his or her own life via individual participation, in a group, with a group, or outside of formal settings. Therefore, it can be said that the student's participation in group or out-of-school learning environments is a situation that first requires individual participation. In this context, the individual participation of students in lessons includes participation in group or out-of-school learning environments. Therefore, individual participation is thought to be more effective on academic achievement. In the literature, there are no studies in which students' participation in individual, group, or out-of-school learning environments was found to predict their academic achievement in social studies lessons. However, Şahin-Yanpar (1994) revealed that students'

participation in out-of-school learning environments in 4th grade social studies lessons positively affected their academic achievement. Thus, the result of the present study showing that students' participation in out-of-school learning environments positively affects their academic achievement overlaps with the findings of other studies in the literature.

In this study, students' participation in lessons with a group was associated with processes that require cooperation, such as performing tasks in group work, helping friends in the group, and demonstrating a democratic approach in group work. In this context, students' participation in the learning process with the group can be associated with their participation in cooperative learning environments. In the literature, in the studies of Çelebi (2006) and Kuş and Karatekin (2009), it was found that the participation of students in cooperative learning groups in social studies lessons positively affected their academic achievement. Therefore, the finding that students' participation in social studies lessons with a group has a positive effect on academic achievement is supported by some other studies in the literature.

It was seen in this study that the pre-knowledge level of the students positively affected their academic achievement. Prior knowledge is the initial information that learners bring to the learning environment and it is compatible with the new information they will learn (Şimşek, 2017). In this context, it can be said that a student with a high level of prior knowledge has the necessary basic preparation to acquire new information. Prior knowledge is one of the most important features affecting success in the learning process (Thompson & Zamboagna, 2003). Therefore, it is expected that the academic achievement of students will be affected by their prior knowledge levels. There is no previous study in the literature predicting the effect of students' prior knowledge on their academic achievement in social studies lessons. However, it is emphasized in the literature that prior knowledge is an important variable affecting academic achievement in studies on different disciplines. In this context, Bayram, Sökmen, and Savcı (1997) stated that prior knowledge is an important variable that positively affected academic achievement in chemistry teaching. Therefore, the relationship between prior knowledge levels and academic achievement in the present study coincides with the literature. On the other hand, quantitative determination of the positive effect of students' prior knowledge on their academic achievement in social studies lessons is a unique result for this study.

In this study, it was observed that the direct participation of the teacher in the learning process negatively affected the academic achievement of the students. Therefore, it can be said that the teacher conducting the learning process alone in social studies lessons negatively affects the academic achievement of the students. On the other hand, it was also determined that teachers' participation in the learning process positively affected academic achievement in relation to students' orientation to the lesson (positive emotions-attitude, interest, and importance) and their participation in out-of-school learning environments. Another result obtained in this study is that the orientation of students to the lesson positively affected their academic achievement in relation to their individual and group participation in the lesson. In this context, it can be said that the fact that the teacher offers opportunities for students to participate in individual, group, or out-of-school learning environments in social studies lessons and encourages them to participate in the learning process positively affects their academic achievement. In studies in the literature, it is emphasized that the active participation of students in the course, the teacher's support of the students, and the involvement of students in the process positively affect academic achievement (Çelik, Örenoğlu-Toraman, & Çelik, 2018). Therefore, the results obtained in this study in the context of the effect of the role of the teacher on the academic achievement of students are supported by studies in the literature. On the other hand, there is no study in the literature predicting the effect of teachers' roles in social studies lessons on students' academic achievement. However, according to the results obtained in this study, a student-centered teaching process in social studies lessons will positively affect academic achievement. Student-centered education is explained as a process that places students' individual needs, preferences, and goals at the center and gradually adds students to the decision-making processes that affect their learning (Benson, 2012). In student-centered teaching, the teacher is expected to design environments

that will give the student the responsibility of learning, to encourage students to participate in these environments, and to motivate students (Weimer, 2002). In the literature, there are studies showing that student-centered teaching positively affects the academic achievement of students in social studies courses. In one of those studies, Yaşar et al. (2015) analyzed 51 thesis studies in which student-centered approaches, methods, techniques, and materials were used in social studies lessons. According to their results, student-centered approaches, methods, techniques, and materials had a positive effect on academic achievement. In a similar study, Yeşilpınar-Uyar and Doğanay (2018) found that, in general, teachers' use of a student-centered approach in the learning process affects students' academic achievement more positively. Therefore, the results of the present study regarding the relationship between teacher-centered teaching and academic achievement are explained and supported by the literature.

In this study, it was seen that the learning style of students had a positive effect on their academic achievement. Learning style is defined as the strengths and preferences of the learner in obtaining, processing, and retaining information in the learning process (Felder & Silverman, 1988). Therefore, it can be said that learning style is a learner feature that includes learning preferences toward the learning environment. In the literature, it is emphasized that learning style is an important variable that affects academic achievement in general (Bozkurt & Orak, 2016; Cevher & Yıldırım, 2020). The result that learning style has a significant effect on academic achievement in this study thus coincides with findings in the literature. However, according to the results of the present study, students with a visual learning style were more successful than students with a verbal learning style. It can be said that the frequent use of visual elements such as projection and interactive boards in current teaching practices, teachers not using meaningful learning techniques as before, and teachers preferring video lectures in interactive learning environments instead of storytelling and narration techniques cause this difference in success. Therefore, current teaching practices are thought to predominantly support the learning styles of visual learners. In the literature, it was concluded that learning styles differentiated academic achievement in social studies courses (Yurtseven, 2010), generally at the primary school level (Collison, 2000; Kazu & Koç-Akran, 2018). In this context, the result that students' learning styles positively affect their academic achievement in social studies lessons and that academic achievement in these lessons differs significantly according to learning style coincides with and is supported by studies in the literature.

It was found in this study that the cognitive styles of students had a positive effect on their academic achievement. "Cognitive style" refers to the preferred ways of receiving, organizing, processing, remembering, and retaining information until it is necessary (Witkin et al., 1977). Therefore, it can be said that cognitive styles are a distinctive learner feature that form learning styles. In the literature, it is generally emphasized that cognitive styles are an important variable affecting academic achievement (Şimşek, 2017). It was also found in this study that students with a field-independent cognitive style were significantly more successful than students with a field-dependent cognitive style. It is claimed in the literature that traditional teaching environments offer more advantages to students with field-independent styles (Bahar, 2003; Özarslan & Bilgin, 2016). Therefore, those teaching practices are thought to predominantly support the learning styles of independent learners. In different studies in the literature, it was concluded that cognitive styles differentiated academic achievement in social studies lessons (Ndudi & Mkpa, 2003) and at the primary education level (Kıncal & Yazgan, 2010; Onyekuru, 2015). In this context, the result that students' cognitive styles positively affected their academic achievement in social studies lessons and that academic achievement in this course differed significantly according to cognitive style coincides with and is supported by other studies in the literature.

Limitations of the Study

The results obtained in this study are valuable for social studies education and teaching in primary school. However, the study has some limitations due to its sample and method. In particular, the sample from which the study data were obtained consisted of students studying in a single school. In

this context, a school from an environment with average sociocultural and socioeconomic characteristics was selected. Therefore, repeating the study comparatively with different samples is very important for the validity and generalizability of the results. On the other hand, with this study, the relationship between different variables and success was discovered in a structural model created based on the literature and observations. However, empirical inferences are needed to analyze these relationships in more depth by establishing a cause-and-effect relationship. Despite these limitations of the study, according to the results obtained during the research process, the following suggestions can be offered to teachers in order to provide a more successful learning environment:

- Teachers can provide an effective and productive learning environment by preparing individual, group, or out-of-school learning environments for students in social studies lessons. This should not be understood simply as using individual, group, or out-of-school learning environments; teachers can use every type of environment in the learning-teaching process at the same time.
- Teachers should ensure that students participate in the learning environment with positive emotions for efficient and effective social studies teaching. For this, primary school teachers can diversify and enrich the activities and contents in the learning-teaching process according to students' interests and personal preferences.
- In this study, it has been seen that a completely teacher-centered teaching process creates limitations in terms of establishing an effective and productive learning environment in social studies courses. It was revealed that the teacher should encourage and engage students in the learning process; in other words, designing student-centered environments will facilitate effective and efficient teaching. In this context, teachers may sometimes shift the responsibility for learning and control of the learning environment to students in social studies lessons.
- In social studies teaching, it was observed that there was a difference in achievement due to students' learning styles. In order to eliminate this difference, teachers should consider different learning styles in the learning process. Teachers can solve this problem by including activities suitable for different learner characteristics in the learning-teaching process.

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