

# A Model for Explaining Student Achievement in Social Studies Course

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## Abstract

*This study is aimed at showing how learning styles and strategies of elementary and middle school students taking a Social Studies course are explained, along with their attitudes towards the course, and their achievement during the course. The study group consisted of 320 students (172 female and 148 male) attending elementary and middle schools in Turkey. “The Learning Styles Scale”, “The Learning Strategies Scale” and “The Attitude Scale for the Social Studies Course” were used for data collection, while “report card grades” were used for determining the achievement level in the Social Studies course. Within the framework of variables, a basic model was tested by means of path analysis included in the structural equation modeling. It was concluded that the variables learning styles, learning strategies, and attitudes towards the course collectively explained positively the achievement of students in the course.*

**Key words:** achievement; attitude; learning strategy; learning style; social studies.

## Introduction

The Social Studies course is a realistic course that has major importance for educating democratic citizens who can accommodate themselves into every aspect of social life (Kochhar, 1984). It aims at enabling students to understand and evaluate the world containing people, places, cultures, different systems, and problems. In addition, students attending the Social Studies course get to know the society better and consequently start to regard themselves as citizens of that society (Mindes, 2005; Parker, 2010). Thus, an effective and successful Social Studies course is of vital importance for both personal and social reasons. One of the most important determinants of conducting a successful and meaningful Social Studies course is the individual differences between students. This is because every student in a class

has unique personal experiences and a great variety of learning tendencies (Sunal & Haas, 2003). As a matter of fact, it is now generally accepted that students have different preferences in the process of gathering and processing information (Van Zwanenberg, Wilkinson, & Anderson, 2000). Therefore, educators need to accept that individuals learn in different ways and be sensitive to individual differences so that a more productive learning process is introduced (Sims & Sims, 1995). In this regard, the present study is aimed at determining the role of individual differences in explaining achievement.

### ***Learning Styles***

The increased research on the effect of individual differences on learning has brought into prominence the learning styles of individuals. According to Dunn and Honigsfeld (2013), a key to effective teaching lies in theories and studies on learning styles. This is because everybody has different learning styles with different strengths and weaknesses (Kolb, 1981), and such learning styles play a big role in the learning process. Learning styles refer to people's different methods of acquiring knowledge (Pashler, McDaniel, Rohrer, & Bjork, 2008) and ways preferred for learning and studying (Pritchard, 2009). Sternberg defined learning styles as the individual differences of students in habits, preferences and tendencies concerning learning and studying (Hewitt, 2008).

Learning styles have a major influence on the performance of people and the accomplishment of their learning goals (Dunn & Dunn, 2002; Liu & Reed, 1994). Students with different learning styles learn better when different ways of teaching are adopted. For example, students with a visual learning style prefer to learn by seeing. They have quite a good visual memory. They learn better if the information is presented through figures, such as graphs, diagrams, maps, and tables. Students with an auditory learning style prefer to learn by listening. They have a very good memory concerning the verbal elements, including verbal discussions, narrations, stories, and voice tapes. Students with a kinesthetic learning style prefer to learn by taking actions. They have a very good memory concerning activities and physical experiences (Pritchard, 2009, pp. 44-45). Due to all these differences, the teaching process should be planned by taking into consideration students' learning styles, so that all students can be successful in their learning. As a matter of fact, it is argued that the educational environment which is arranged by taking into account different learning styles is one of the key concepts for effective learning (Vaishnav, 2013). In addition, previous research on the effect of learning styles on the achievement levels of students also supports this argument (Kopsovich, 2001). Many studies have been conducted in regard to the effects of learning styles, which have such a large impact on an effective learning process. Research on learning styles provides various benefits. One such benefit is improving the awareness of implementers regarding the concept of the learning style. In addition, it helps individuals to understand that they can shape

their own learning processes by having a better knowledge of their own learning processes (Evans & Sadler-Smith, 2006). In this sense, the present study made an attempt to determine the role of learning styles in achievement.

### ***Learning Strategies***

While learning styles put emphasis on automatic learning processes and habits of individuals, learning strategies involve making a conscious attempt to cope with a specific situation (Sadler-Smith, 1996). In other words, students having different learning styles may arrange their own learning effectively through adopting appropriate learning strategies in accordance with their learning styles (Oxford, 2003). Learning strategies refer to a process where tools which are used by individuals in the learning process and which facilitate the integration and encoding of knowledge are employed (Weinstein, 1988; Zimmerman, 1990). In a sense, learning strategies also involve students taking responsibility for their own learning and playing an active role in the process (Hong, Sas, & Sas, 2006). Learning strategies need to be understood by students as well so that effective learning can be achieved. Students' awareness of which strategies should be employed, and how and when such strategies should be employed, is very important for achievement (Hewitt, 2008). Since learning strategies teach students how to learn, they improve the implemented curriculum's level of accomplishing its goals (Deshler & Schumaker, 1993). In addition, the awareness of learning strategies is a factor in improving the self-confidence, and thus the achievement levels of students (Weinstein, Ridley, Dahl, & Weber, 1989). The previous research on this subject also supports this. For example, Tuckman and Kennedy (2011) focused on the relationship between learning strategies and achievement, and concluded that teaching learning strategies to college students improved their achievement. Many studies on learning strategies demonstrate that learning strategies are a very important factor that improves achievement (Diseth & Kobbeltvedt, 2010; Judd, 2005).

### ***Attitudes***

In addition to learning styles and learning strategies, individual differences in the affective field are also thought to be one of the important factors influencing achievement. Individual differences in the affective field include factors such as attitudes and motivation (MacIntyre, 2002). The present study focused on how attitudes towards the course also explained achievement. An attitude is the emotional response of a person that reflects his/her emotions and personal admirations (Sunal & Haas, 2003). It refers to a person's tendency to respond to events, organizations, people or objects appropriately or inappropriately (Ajzen, 2005). It is thought that students' attitudes towards a course are an important factor, influential in achievement. The previous research on attitudes demonstrates that attitude towards a course is one of the important factors influencing achievement. For instance, Ma and Kishor (1997)

carried out a meta-analysis and pointed to the existence of the relationship between achievement in mathematics and attitudes towards the mathematics course. Similarly, Petscher (2010) conducted a study on achievement in the field of reading, and reported that there was quite a strong relationship between achievement in reading and attitude towards reading at elementary education level, in particular. It goes without saying that attitudes are quite important for achievement in the Social Studies course, too. As a matter of fact, one of the primary goals of the Social Studies course is to give rise to positive attitudes that may encourage students to learn effectively (Sunal & Haas, 2003). The Social Studies course is a multidisciplinary course that contains many different disciplines. Thus, negative perceptions regarding the Social Studies course may cause negative attitudes towards these disciplines in the future. For all these reasons, it was considered significant to determine attitudes towards the Social Studies course, as well as the factors associated with them.

### ***Learning Styles, Learning Strategies, Attitudes and Achievement***

The primary goal of the Social Studies course is to enable students to be active and influential citizens in social life. Thus, it is very important that the Social Studies course is meaningful and successful. To improve achievement, the most important thing to do is to focus on improving the achievement of all students included in the education system (Dunn & Honigfeld, 2013). In order to increase the academic achievement of all students, the factors affecting attainment should be clearly identified. Identifying the sources of the differences between children's academic achievement and issues related to achievement plays a crucial role in affecting the decisions to be made in education (Rimfeld, Kovas, Dale, & Plomin, 2016). Increasing academic achievement has been one of the most researched topics in education over the years. Academic achievement is influenced by factors such as intelligence, cognitive capacity, motivation and learning styles as well as organizational and environmental factors (Akbaba Altun & Çakan, 2008). Factors which affect academic achievement can be examined in two categories: mental and non-mental factors. Mental factors are related to a student's capacity of comprehending knowledge whereas non-mental factors are individual factors, motivation, socio-economic level, etc. (Deka, 1993). In this research, academic achievement is explained by taking individual factors into consideration. When research on academic achievement is examined, it is understood that it differs depending on the individual factors.

Achievement is associated with both individual affective differences, such as motivation (Steinmayr & Spinath, 2009), self-concept (Chen, Yeh, Hwang, & Lin, 2013), and interests and attitudes (Graham, Berninger, & Fan, 2007; Ma & Kishor, 1997) and individual cognitive differences, such as learning styles, multiple intelligence areas (Snyder, 2000), and learning strategies (Ocak & Yamaç, 2013). Research shows that academic achievement is related to learning styles, learning strategies and student attitudes. It is not possible to think that achievement in the Social Studies course is

independent of these factors. This research aims to reveal how students' learning styles, learning strategies and attitudes towards Social Studies course of primary and middle school students explain their achievement and success.

### ***The Model***

The objective of this study was to create a model that puts forth the relationship between success in Social Studies course and learning styles, learning strategies as well as the attitude towards the course. The main framework of the created model is the idea that these variables hold a very important place for the attainment of meaningful and permanent learning and thus they affect academic success.

Humans differ from one another in many fields, and learning mediums are among those that differ most significantly, because the interests, needs, motivation sources, attitudes as well as learning styles of people may differ (Al-Hebaishi, 2012). Thus, it is critical that the individual differences of students are taken into account in order to ensure that they learn what is taught and that they are successful. Indeed, there are many studies that put forth the relationship between individual differences and learning. When these studies are examined, it is observed that the reason for this is its contribution to success in learning and teaching. Learning styles emphasize the different ways of learning for different individuals (Pashler, McDaniel, Rohrer, & Björk, 2009). As far as learning is concerned, every individual has various characteristics that they are given when they are born (Holtham & Courtney, 2001). It can even be said that learning style is a concept shaped by inborn qualities and that individuals are born with different learning styles.

One of the individual differences put forth in many studies regarding the relationship between learning and academic success is learning strategies which require that individuals take more responsibility in a conscious manner to be able to learn. Indeed, learning strategies are defined as purposeful behavior used by students to improve learning (Mayer, 1988). Learning strategies and learning styles are in close interaction with each other, because students use their inborn learning styles when creating their learning strategies. That is, they select and use their learning strategies in accordance with their inborn learning styles. Indeed, studies regarding the relationship between learning styles and strategies support this view (Carson & Longhini, 2002; Ehrman & Oxford, 1990; Pei-Shi, 2012). Thus, the opinion that learning styles affect learning strategies and learning strategies in turn affect success is among the fundamentals of this study. In addition, one of the most important bases of the model is that affective factors influence success. It is thought that the attitudes of students towards the course will affect their success especially in courses such as Social Studies, which is generally thought to be boring. It is thought that students who have developed learning strategies according to their inborn learning styles will learn in a more systematic manner which in turn will have a positive effect on their attitudes. This research aims to examine variables that affect achievement in Social Science course through a

model formed by structural equality model. A model of structural equality has been created by combining learning styles, learning strategies and attitudes towards Social Science courses that are thought to affect students' achievement in this course. Thus, it has been revealed how the learning styles, learning strategies and attitudes towards the social science course of primary and middle school students explain the Social Studies course achievement.

From the studies carried out on similar samples, which discuss the relations between the aforementioned variables, it can be seen there was no research that examined the effects of learning styles, learning strategies and attitudes on success. Similarly, previous studies on social studies course achievement investigated the effect of learning styles (Bilgin & Durmuş, 2003; Yurtseven, 2010), learning strategies (Çelikkaya & Kuş, 2010) and attitudes towards the course respectively (Tay & Akyürek Tay, 2006) on Social Studies course achievement. Çetingöz and Özkal (2009) investigated the use of learning strategies and attitudes of high-achieving and low-achieving students towards the Social Studies course. As a result of the research, it was found that successful students who had a positive attitude towards the lesson use more strategies. Dikbaş and Kaf Hasirci (2008) stated that the use of learning strategies in the Social Studies course has a positive effect both on academic achievement and attitudes. When the studies related to the achievement in the Social Studies course are examined, only independent variables related to the academic achievement are examined. However, it is considered that all these variables are in relation with each other and have the power to influence one another. Therefore, the research differs from other studies as it aims to explain the achievement in Social Studies course with the variables of style, strategy and attitude. For this reason, it is considered that the research will contribute to the field of Social Studies teaching in the sense that it will offer a new model in which interactions between learning styles, learning strategies and attitudes are taken as a whole.

## **Method**

### ***Research Model***

A relational survey model was employed in the present study, which made an attempt to explain students' achievement in the Social Studies course, with their learning styles, learning strategies, and attitudes towards the course being a mediating variable. The relational survey model is a research model aimed at determining the existence and degree of covariance between two or more variables (Fraenkel & Wallen, 2006). The study examined the achievement of students in the Social Studies course within the context of its relationship with the variables of learning styles, learning strategies, and attitudes towards the Social Studies course.

### ***Study Group***

The sample consisted of 320 students (172 being female and 148 being male) attending elementary and middle schools located within the municipal borders of Sakarya Province in Turkey. Simple random sampling was used to recruit participants.

The students included in the study group attended different grades. For example, 62 had fourth-grade (level) report card grades (marks) in Social Studies, 96 had fifth-grade report card grades in Social Studies, 78 had sixth-grade report card grades in Social Studies, and 84 had seventh-grade report card grades in Social Studies. The general structure of the schools we have included in our study is similar. The model tested in the study did not contain the variables of grade and sex. They were addressed only as the characteristics of the study group.

### **Data Collection Tools**

“The Learning Styles Scale” and “The Attitude Scale for the Social Studies Course” were used for data collection, while “report card grades” were used for determining the achievement in the Social Studies course.

*The learning styles scale:* data related to the learning styles of students were collected by the “Learning Styles Scale” developed by Gökdağ (2004) in Turkish. The scale is a 5-point Likert-type scale with 28 items, it is three-dimensional with dimensions of “Visual” (for example, *I learn better when I see the model of something*), “Auditive” (for example, *I verbalize the problem to myself when solving it*) and “Kinesthetic” (for example, *I learn better by doing it*), each consisting of 5 items. All of these items had positive meanings. The score to be obtained in the scale varied between 28 and 140. While the Cronbach’s Alpha reliability coefficient of the scale was 0.7, the internal consistency coefficient was found to be 0.83.

*The learning strategies scale:* the scale was developed by Çelikkaya and Kuş (2010) in order to determine how students learned during the Social Studies course in Turkish. The scale consisted of 35 items associated with four strategies: interpretation, attention, repetition, and socio-affective. The degrees of agreement were constructed as follows: “always”, “often”, “sometimes”, “rarely” and “never”. Of those studied, 12 of the statements included in the scale were associated with interpretation (for example, *I research examples from my immediate surroundings*), 3 were associated with attention (e.g. *I underline important sections*), 5 were associated with repetition (e.g. *I review the notes I take in class*), and 15 were associated with socio-affective strategy (e.g. *I study by talking to an imaginary person*). The above-mentioned distribution was based on the importance of strategies. The significance of each strategy was important for the distribution of the number of items in each dimension. The Cronbach Alpha internal consistency coefficient of the scale was .80, whereas the internal consistency reliability coefficient was determined as .90.

*The attitude scale for the Social Studies course:* data concerning the attitudes of students towards the Social Studies course was obtained via “The Attitude Scale for the Social Studies Course”, developed by Çalışkan (2009) in Turkish. It was a 5-point Likert-type scale, and consisted of 33 items (21 positive attitudes and 12 negative attitudes). The scale has a four-factor structure consisting of 9 items for “Importance of the Course” (e.g. *I think that what I learn in the Social Studies course prepares me for*



social life), 10 items for “Attractiveness of the Course” (e.g. *Social Studies topics do not interest me*), 10 items for “Course Content” (e.g. *I enjoy learning about the historical subjects in the Social Studies course*) and 4 items for “Course Activities” (e.g. *I have fun while learning what is taught in Social Studies course*). The internal consistency coefficient of the scale was 0.93. The internal consistency coefficient of the scale, which was calculated based on the data of the present study, was found to be 0.89, however.

*Report card grades:* year-end report card grades were used for determining the achievement of students in the Social Studies course. The achievement of each student in the Social Studies course was determined by the researchers through looking at pass charts in the school archives. School report grades consist of a grade point average scored by students from examinations and academic work (project, performance task, participation in activities) during a semester. The acquired Social Studies course success scores had been transformed into standard scores for each class and were then subject to statistical operations.

### **Data Analysis**

This study made an attempt to investigate the relationship between achievement in the Social Studies course and students’ learning styles, learning strategies, and attitudes towards the course. To this end, within the framework of the variables influencing student achievement in the Social Studies course, a basic model was tested by means of the path analysis included in the structural equation modeling. In addition, the transformation of the Social Studies course success scores to standard scores was carried out by calculating the t scores, the relationship between variables was determined via correlation analysis whereas normality was determined by the Kolmogorov-Smirnov test. When the Kolmogorov-Smirnov values were examined, it was found that the data had normal distribution in learning styles, learning strategies and attitude. Normality was checked after scores (grade grades) had been converted to standard scores. The Skewness value for the achievement scores of the grades was .089 and the Kurtosis value was -.960. According to these values, normal distribution of the data can be argued to be appropriate. In addition, when the histogram graph of the grades is examined, it can be said that the data are normally distributed. Analyses were made via SPSS 15 and AMOS 7.0.

## **Results**

This section presents findings concerning the testing of the model explaining the student achievement in the Social Studies course.

Three main hypotheses were tested in the study concerning the modeling tested through path analysis: attitudes towards the course were included as a mediating variable in the first, second and third models, regarding the prediction of achievement in the Social Studies course in terms of students’ learning styles. Prior to path model tests, the adequacy of correlations between relevant variables and descriptive statistics were investigated.



Table 1  
Descriptive statistics and the values of correlations between variables

Variables	1	2	3	4	5	6	7	8	9
(1) Achievement (ACH)	1								
(2) Attitude	0.36**	1							
(3) Visual (VIS)	0.17*	0.23**	1						
(4) Auditory (AUD)	0.07	0.07	0.45**	1					
(5) Kinesthetic (KIN)	0.13*	0.05	0.62**	0.52**	1				
(6) Attention (ATT)	0.20**	0.31**	0.31**	0.15**	0.10	1			
(7) Repetition (REP)	0.24**	0.30**	0.32**	0.02	0.12*	0.54**	1		
(8) Interpretation (INT)	0.19**	0.25**	0.41*	0.14*	0.16**	0.59**	0.74**	1	
(9) Socio-Affective (SA)	0.15**	0.18**	0.41**	0.25**	0.29**	0.51**	0.63**	0.76**	1
Mean	74.33	3.93	3.76	3.47	3.67	3.99	3.70	3.54	3.57
Standard Deviation	15.09	0.55	0.57	0.68	0.56	0.86	0.75	0.70	0.54
TOTAL	320	320	320	320	320	320	320	320	320

\*p<0.05; \*\* p<0.01

In Table 1, the examination of binary and partial correlations between the student achievement in the Social Studies course and explanatory variables showed that there were significant correlations between achievement scores and relevant variables, except for auditory learning style. Although that seemed unfavorable for testing the model, it was decided that the model could still be tested because there were moderate correlations between other variables. It can be said that all of the above-mentioned correlational values obtained were adequate for testing the model.

After the coefficients of the correlations between the variables were obtained, it was determined, by the Kolmogorov-Smirnov test, that all data had a normal distribution. Thus, model tests were performed for explaining achievement by means of the structural equation modeling maximum likelihood method.

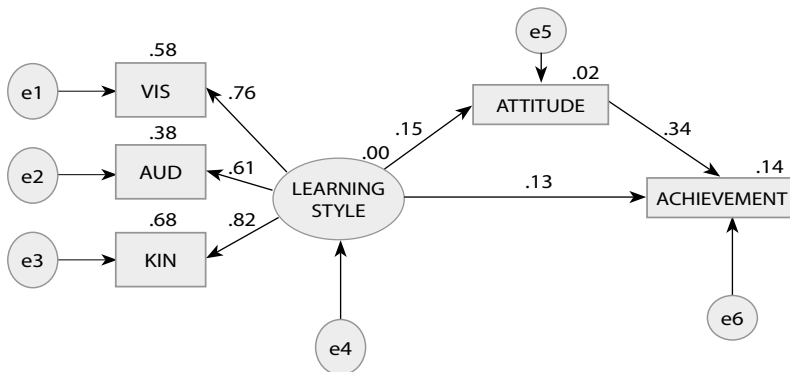


Figure 1. The path diagram concerning the conceptual model

Figure 1 presents the results of the analysis concerning the first model test. The examination of the fit coefficients concerning the tested model showed that the Chi-Square value was significant [ $\Delta\chi^2(4)=17.7$ ;  $\Delta\chi^2/df=4.43$ ;  $p<0.001$ ], and the fit coefficients were as follows: RMSEA=0.10, CFI=0.96, IFI=0.96, NFI=0.95, TLI=0.90, GFI=0.98, and AGFI=0.92. Fit values such as AGFI, GFI, CFI, IFI, NFI, and TLI being over 0.90 (Jöreskog & Sörbom, 1993; Tabachnick & Fidel, 2001), the value obtained through the proportioning of the Chi-Square value to the degree of freedom being below 5 (Kline, 2005; Tabachnick & Fidel, 2001) and RMSEA value being below 0.10 indicate that the model has good fit values, and therefore is acceptable (Schweizer, Moosbrugger, & Schermelleh-Engel, 2003; Tabachnick & Fidel, 2001). Thus, it was not deemed necessary to examine improvement indices.

The examination of the findings regarding the standardized values belonging to total effects concerning the first model indicated that the total power of learning styles to predict attitudes towards the course was 0.15 points, their total power to predict achievement was 0.18 points, and the total power of attitude towards the course to predict achievement was 0.34.

The examination of the findings regarding the standardized values belonging to direct effects indicated that the power of learning styles to predict attitudes towards the course directly was 0.15 points, their power to predict achievement directly was 0.13 points, and the power of the attitude towards the course to predict achievement directly was 0.34. In other words, there was a difference only in the power of learning styles in predicting achievement.

An examination of the findings regarding the standardized values belonging to indirect effects indicated that the power of learning styles to predict achievement indirectly was 0.05 points. This implies that learning styles had both direct and indirect effects (through attitudes towards the course) on students' achievement. In other words, attitudes towards the course had a mediating effect on the effect of students' learning styles on the achievement in the Social Studies course.

When all of the above-mentioned results obtained in regard to the first model are considered together, it is seen that the learning styles of students predicted their attitudes toward the Social Studies course [ $b=0.15$ ;  $p<0.05$ ] and their achievement [ $b=0.13$ ;  $p<0.05$ ], and that the attitudes of students towards the course predicted their achievement [ $b=0.34$ ;  $p<0.01$ ]. Apart from that, the learning styles of students had an indirect effect on their achievement in the Social Studies course, and attitudes towards the course mediated such an effect.

Figure 2 presents the results of the analysis concerning the second model test. The examination of the fit coefficients concerning the tested model showed that the Chi-Square value was significant [ $\Delta\chi^2(8)=21.7$ ;  $\Delta\chi^2/df=2.71$ ;  $p<0.01$ ], and the fit coefficients were as follows: RMSEA=0.07, CFI=0.98, IFI=0.98, NFI=0.97, TLI=0.97, GFI=0.98, and AGFI=0.94. Since the obtained fit coefficients were quite high, it was not deemed necessary to examine improvement indices. Thus, the model test was accepted exactly as it was in its original version.

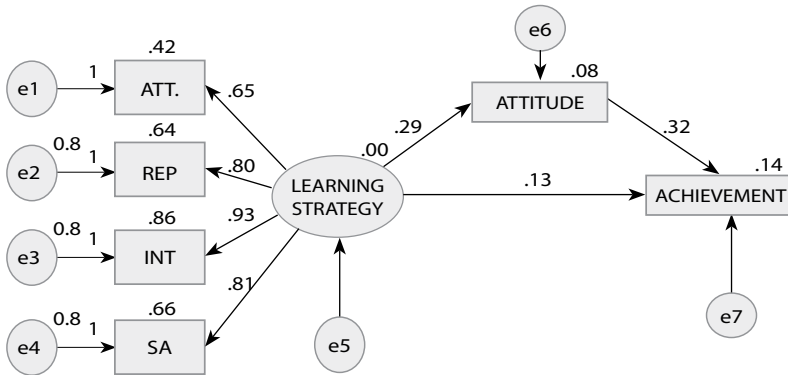


Figure 2. The path diagram concerning the conceptual model

The examination of the findings regarding the standardized values belonging to total effects concerning the second model indicated that the total power of learning strategies to predict attitudes towards the course was 0.29 points, their total power to predict achievement was 0.22 points, and the total power of the attitude towards the course to predict achievement was 0.32.

An examination of the findings regarding the standardized values belonging to direct effects indicated that the power of learning strategies to predict attitudes towards the course directly was 0.29 points, their power to predict achievement directly was 0.13 points, and the power of attitudes towards the course to predict achievement directly was 0.32. In other words, the learning strategies created a difference in the power to predict achievement.

The examination of the findings regarding the standardized values belonging to indirect effects indicated that the power of learning strategies to predict achievement indirectly was 0.09 points. That implies that the learning strategies had both direct and indirect effects (through attitudes towards the course) on the achievement of students. In other words, attitudes towards the course had a mediating effect on the influence of the learning strategies of students on the achievement in the Social Studies course.

When all of the above-mentioned results obtained in regard to the second model are considered together, it is seen that the learning strategies of students predicted their attitudes towards the Social Studies course [ $b=0.29$ ;  $p<0.01$ ] and their achievement [ $b=0.13$ ;  $p<0.05$ ], and that the students' attitudes towards the course predicted their achievement [ $b=0.32$ ;  $p<0.01$ ]. Apart from that, students' learning strategies had an indirect effect on their achievement in the Social Studies course, and attitudes towards the course mediated such effect.

Figure 3 presents the results of the analysis concerning the third model test. The examination of the fit coefficients concerning the tested model showed that the Chi-Square value was significant [ $\Delta\chi^2(23)=102.13$ ;  $\Delta\chi^2/df=4.44$ ;  $p<0.001$ ], and the fit coefficients were as follows: RMSEA=0.10, CFI=0.93, IFI=0.93, NFI=0.91, TLI=0.90,

GFI=0.93, and AGFI=0.86. Since the obtained fit coefficients were quite high, it was not deemed necessary to examine improvement indices. Thus, the model test was accepted exactly as it was in its original version subjected to the analysis.

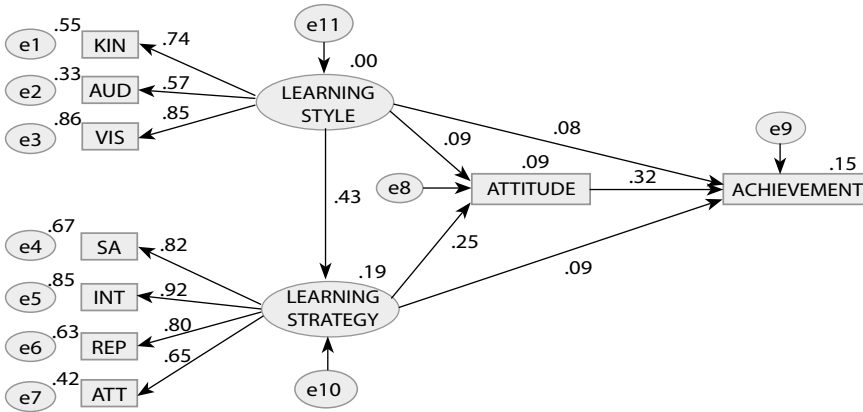


Figure 3. The path diagram concerning the conceptual model

The examination of the findings regarding the standardized values belonging to total effects concerning the third (final) model indicated that the total power of the learning styles to predict the learning strategies was 0.43 points, their total power to predict attitudes towards the course was 0.20 points, and their total power to predict achievement was 0.19 points, while the total power of attitudes towards the course to predict achievement was 0.32. In addition, it was found that the total power of learning strategies to predict attitudes towards the course was 0.25 points and their total power to predict achievement was 0.17 points, while the power of attitude towards the course to predict achievement was 0.32.

The examination of the findings regarding the standardized values belonging to direct effects indicated that the power of learning styles to predict the learning strategies directly was 0.43 points, their power to predict attitudes towards the course directly was 0.09 points, and their power to predict achievement directly was 0.09 points. In addition, it was found that the power of the learning strategies to predict attitudes towards the course directly was 0.25 points and their power to predict achievement directly was 0.09 points, while the power of attitudes towards the course to predict achievement directly was 0.32. Thus, there was a difference only in the power of learning styles and learning strategies to predict achievement and power of learning styles to predict attitude.

The examination of the findings regarding the standardized values belonging to indirect effects indicated that a change of 0.10 points took place in the power of learning styles to predict achievement indirectly, a change of 0.08 points took place in the power of learning strategies to predict achievement indirectly, and a change of 0.11 took place in the power of learning styles to predict attitudes towards the

course indirectly. That implies that the learning styles had both direct and indirect effects (through the learning strategies and attitudes towards the course) on students' achievement. In other words, learning strategies and attitudes towards the course had a mediating impact on the effect of the learning styles of students on the achievement in the Social Studies course. What is more, attitudes towards the course had a mediating impact on the effect of the learning strategies of students on their achievement in the Social Studies course.

When all of the above-mentioned results obtained in regard to the third (final) model are considered together, it is seen that students' learning styles predicted their learning strategies [ $b=0.43$ ;  $p<0.01$ ], their learning strategies predicted their attitudes towards the Social Studies course [ $b=0.25$ ;  $p<0.01$ ], and their attitudes towards the Social Studies course predicted their achievement [ $b=0.32$ ;  $p<0.01$ ] significantly. In addition, it is seen that the learning styles of the students did not predict their attitudes towards the course [ $b=0.09$ ;  $p>0.05$ ] and their achievement [ $b=0.08$ ;  $p>0.05$ ] significantly, while their learning strategies did not predict their achievement [ $b=0.09$ ;  $p<0.05$ ] significantly. Although no significant difference was found between some variables, there were low and moderate effects (Kline, 2005) between variables in consideration of the effect sizes of standardized path coefficients. All these findings imply that the learning styles of students had an effect on achievement through learning strategies and attitudes towards the course.

## **Discussion and Conclusion**

This study made an attempt to explain student achievement in the Social Studies course considering their learning styles, learning strategies, and attitudes towards the said course. The model tested in the present study managed to explain the achievement in the Social Studies course. In other words, learning styles, learning strategies, and attitudes towards the course explained the achievement of students in the course altogether. It was seen that explanatory variables explained achievement in the course positively. Learning styles, which was the first explanatory variable, directly and indirectly predicted achievement positively and significantly in the first model. Although their power of predicting directly decreased in the final model, they continued to have a significant effect indirectly. An examination of the final model shows that learning styles transferred their explanatory effect power to learning strategies. That may be the reason why their power to predict achievement directly and to predict achievement through attitudes decreased in the final model. On the other hand, the fact that learning strategies had a stronger relationship with attitudes may have reduced the effect of learning styles on attitudes. In the end, a final model where the total effect of learning styles on explaining the achievement in the Social Studies course was positive and significant came out. Similarly, Vaishnav (2013) revealed the relationship between the achievement levels of secondary education students and their learning styles. Matthews (1996) stated that there was a relationship between

the achievement perceptions of high school students regarding themselves and their learning styles. The review of the related literature demonstrates that there are various studies revealing the interaction between the learning styles and the achievement of students, thereby supporting the results of the present study (Ikitde & Edet, 2013; Van Zwanenberg, Wilkinson, & Anderson, 2000). In consideration of the model created in the present study and the results of different studies in this matter, it can be concluded that learning styles are one of the important factors influencing achievement in the Social Studies course.

Learning strategies directly and indirectly predicted achievement positively and significantly in the first model. Although their power to predict directly decreased in the final model, they continued to have a significant effect through attitudes. Learning strategies affected the achievement of students significantly and positively overall. This finding is consistent with the previous research, too (Diseth & Kobbeltvedt, 2010; Judd, 2005). In addition, the findings of the present study imply that the employment of learning strategies by students has a positive effect both on their achievement in the Social Studies course and on their attitudes towards the said course. Previous studies on this subject provided similar results regarding the interaction between learning strategies and achievement and attitudes, although in different fields. For example, Dan and Todd (2013) found that the interest of students in the history course, and the learning strategies employed by them, had an effect on their achievement. Similarly, Ames and Archer (1988) stated that those students who focused on success were the students employing more effective strategies and having positive attitudes towards the course. Apart from that, some studies showed that there was a relationship between the employment of learning strategies and effective characteristics. For instance, Yang (1999) reported that there was a relationship between beliefs about learning English and the learning strategies employed. Generally speaking, it can be said that those students who employ learning strategies can control the learning process actively and do not waste time learning in vain (Bisland, 2005). That can be regarded as one of the reasons for the positive effect of learning strategies on attitudes. Therefore, learning strategies have quite a significant effect on attitudes and achievement. Thus, it can be inferred that learning strategies may play a major role in the elimination of negative attitudes towards the Social Studies course, and consequently in the improvement of achievement.

Another important result of the present study was that positive attitudes towards the Social Studies course improved student achievement in the course. The positive perceptions of students regarding the Social Studies course increased their achievement in the course. The findings of the present study are consistent with the results of previous studies, suggesting that students' positive attitudes towards the course improve achievement (Ward, 2013). In parallel with the results of the present study, Walberg and Weinstein (1982) stated that there was a positive relationship between achievement in the Social Studies course and attitudes towards this course.

Based on the research findings, it can be argued that attitudes are quite an important factor, which influences the achievement in the Social Studies course. Teachers should take that into consideration and make an effort to enable students to develop positive attitudes towards the Social Studies course in order for them to succeed in this course.

The present study demonstrated that learning styles had an effect in explaining the achievement in the Social Studies course through learning strategies and attitudes towards it. An examination of the final model shows that when learning strategies were included in the model, the power of learning styles to explain attitudes and achievement decreased. However, it was realized that learning styles had a strong effect on learning strategies, as per the model. In consideration of that, the learning styles may have affected achievement and attitudes more through learning strategies. This result is quite meaningful in that it is reported that the employment of learning strategies depends on the preferred learning styles (Oxford, 2003). As a matter of fact, the related literature contains some research dealing with the relationship between learning styles and learning strategies (Liu & Reed, 1994).

Explaining achievement in the Social Studies course, this model was considered significant in that it revealed the effect of learning styles, learning strategies, and attitudes towards the course on achievement. The model demonstrated that the learning styles of students predicted their learning strategies significantly, their learning strategies predicted their attitudes towards the Social Studies course significantly, and their attitudes towards the Social Studies course predicted their achievement significantly. The Social Studies course is generally considered boring and difficult. Zhao and Hoge (2005) attempted to determine the attitudes of students towards the Social Studies course by conducting interviews with them. They concluded that students considered the Social Studies course boring and useless. This being the case, it is quite meaningful that learning styles affect achievement through strategies and attitudes. Accordingly, teachers may enable students to develop positive attitudes towards the Social Studies course by taking into consideration the learning styles of their students, and thus the learning strategies developed by them. In this way, student achievement in the Social Studies course may be improved.

Finally, it should be pointed out that some of the measurement tools used in the study (strategy, attitude and success scales) have been developed and are used for the Social Studies course. That is why the results and the interpretations based on these results should be evaluated only within the scope of the Social Studies course.

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# Model za interpretaciju postignuća učenika u predmetu Društvene znanosti

## Sažetak

Ovo istraživanje imalo je za cilj pokazati kako se mogu interpretirati stilovi i strategije učenja učenika osnovnih i srednjih škola koji pohađaju nastavu iz predmeta Društvene znanosti, kao i objasniti njihove stavove prema predmetu i njihova postignuća tijekom nastave. Uzorak se sastojao od 320 učenika (172 ženskog i 148 muškog spola) koji su pohađali osnovne i srednje škole u Turskoj. „Skala stilova učenja”, „Skala strategija učenja” i „Skala stavova prema predmetu Društvene znanosti” koristile su se za prikupljanje podataka, a „ocjene iz izvješća o uspjehu” koristile su se za određivanje stupnja uspješnosti u predmetu Društvene znanosti. U okviru varijabli testiran je osnovni model s pomoću analize putanje koja je uključena u strukturalno modeliranje. Zaključak je da su varijable: stilovi učenja, strategije učenja i stavovi prema predmetu zajedno pozitivno objasnile postignuća učenika u ovom predmetu.

**Ključne riječi:** Društvene znanosti; postignuća; stav; stil učenja; strategija učenja.

## Uvod

Društvene znanosti realističan su predmet koji je od velike važnosti za obrazovanje demokratskih građana koji se mogu uklopiti u bilo koji aspekt društvenog života (Kochhar, 1984). Cilj mu je osposobiti učenike za razumijevanje i procjenjivanje svijeta koji se sastoji od ljudi, mjesta, kultura, različitih sustava i problema. K tomu, učenici koji pohađaju nastavu iz predmeta Društvene znanosti bolje upoznaju društvo i kao rezultat toga počinju se smatrati građanima toga istoga društva (Mindes, 2005; Parker, 2010). Stoga su Društvene znanosti kao učinkovit i uspješan školski predmet od iznimne važnosti i iz osobnih i iz društvenih razloga. Jedna od najvažnijih odrednica uspješne i smislene nastave Društvenih znanosti kao predmeta su individualne razlike među učenicima, i to zato što svaki učenik u razredu ima jedinstvena osobna iskustva i raznovrsne tendencije u procesu učenja (Sunal i Haas, 2003). Zapravo, općenito je prihvaćeno da učenici imaju različite preferencije u procesu prikupljanja i obrade informacija (Van Zwanenberg, Wilkinson, i Anderson, 2000). Stoga nastavnici trebaju prihvatiti činjenicu da svaki učenik uči na drugačiji način i prihvaćati individualne razlike kako bi se mogao ostvariti što produktivniji proces učenja (Sims i Sims,

1995). S tim u vezi, ovo istraživanje ima za cilj odrediti ulogu individualnih razlika u interpretaciji postignuća.

### **Stilovi učenja**

Povećan opseg istraživanja o utjecaju individualnih razlika na učenje privukao je pažnju na različite stilove učenja kod ljudi. Prema Dunnu i Honigsfeldu (2013), teorije i istraživanja o stilovima učenja predstavljaju ključ uspješnog učenja. Razlog tomu je činjenica da svatko ima različite stilove učenja s različitim jačim i slabijim stranama (Kolb, 1981), a takvi stilovi učenja imaju veliku ulogu u procesu učenja. Stilovi učenja odnose se na različite metode s pomoću kojih ljudi usvajaju znanje (Pashler, McDaniel, Rohrer, i Bjork, 2008) i načine na koje uče (Pritchard, 2009). Sternberg je definirao stilove učenja kao individualne razlike učenika u navikama, preferencijama i tendencijama u učenju (Hewitt, 2008).

Stilovi učenja imaju velik utjecaj na rad ljudi i na ostvarivanje njihovih ciljeva učenja (Dunn i Dunn, 2002; Liu i Reed, 1994). Učenici s različitim stilovima učenja uče bolje kada se primjenjuju različite nastavne metode. Na primjer, učenici s vizualnim stilom učenja bolje uče gledanjem. Imaju jako dobro vizualno pamćenje. Bolje uče ako se informacije prezentiraju putem slikovnih prikaza poput grafova, dijagrama, karata i tablica. Učenici s auditivnim stilom učenja bolje uče slušanjem. Jako dobro pamte verbalne elemente, uključujući govorne rasprave, pripovijetke, priče i snimke. Učenici s kinestetičkim stilom učenja više vole učiti kroz aktivnosti. Jako dobro pamte ono što nauče kroz aktivni rad i fizička iskustva (Pritchard, 2009, str. 44-45). Zbog svih tih razlika nastavni bi proces trebalo planirati tako da se u obzir uzmu učenički stilovi učenja, kako bi svi učenici mogli biti uspješni u učenju. Štoviše, smatra se da je obrazovno okruženje koje se organizira na način da se u obzir uzmu različiti stilovi učenja jedan od ključnih pojmova uspješnog učenja (Vaishnav, 2013). K tomu, prijašnja istraživanja o utjecaju stilova učenja na razinu postignuća učenika također idu u prilog tom argumentu (Kopsovič, 2001). Mnoga su istraživanja provedena o utjecaju stilova učenja, jer oni imaju velik utjecaj na uspješnost procesa učenja. Istraživanja o stilovima učenja imaju mnoge prednosti. Jedna je od njih veća osviještenost nastavnika kada se radi o stilovima učenja. Nadalje, pojedinci mogu bolje razumjeti da mogu na bolji način organizirati svoj vlastiti proces učenja kada imaju veće znanje o vlastitom procesu učenja (Evans i Sadler-Smith, 2006). U tom smislu ovim se istraživanjem pokušala odrediti uloga stilova učenja u učeničkim postignućima.

### **Strategije učenja**

Dok stilovi učenja naglašavaju automatske procese učenja i navike pojedinaca, strategije učenja uključuju i svjesni pokušaj snalaženja u određenoj situaciji (Sadler-Smith, 1996). Drugim riječima, učenici koji imaju različite stilove učenja mogu uspješno organizirati svoje vlastito učenje primjenom odgovarajućih strategija učenja u skladu s vlastitim stilom učenja (Oxford, 2003). Strategije učenja odnose se na



proces u kojemu se primjenjuju alati kojima se pojedinci koriste u procesu učenja i koji olakšavaju integriranje i kodiranje znanja (Weinstein, 1988; Zimmerman, 1990). U određenom smislu strategije učenja također podrazumijevaju i učenike koji preuzimaju odgovornost za vlastito učenje i koji su aktivni sudionici procesa učenja (Hong, Sas, i Sas, 2006). Učenici također trebaju razumjeti strategije učenja, kako bi se moglo postići uspješno učenje. Bitno je da učenici znaju kojim bi se strategijama trebali koristiti i kako i kada bi se te strategije trebale primijeniti jer je to jako važno za postignuća (Hewitt, 2008). Kako strategije učenja uče učenike kako učiti, one isto tako povećavaju razinu ostvarivanja ciljeva propisanih kurikulumom (Deshler i Schumaker, 1993). Nadalje, svijest o strategijama učenja jest faktor u povećanju razine samopouzdanja, a samim time i razine učeničkih postignuća (Weinstein, Ridley, Dahl, i Weber, 1989). Prijašnja istraživanja o toj temi također idu u prilog toj tvrdnji. Na primjer, Tuckman i Kennedy (2011) usredotočili su se na vezu između strategija učenja i postignuća te su zaključili da su postignuća studenata na fakultetu bila bolja kada ih se poučavalo o strategijama učenja. Mnoga istraživanja o strategijama učenja pokazuju da su strategije učenja vrlo važan čimbenik koji povećava razinu postignuća (Diseth i Kobbeltvedt, 2010; Judd, 2005).

### **Stavovi**

Uz stilove učenja i strategije učenja smatra se da su individualne razlike u afektivnoj domeni također jedan od važnih faktora koji utječu na postignuća. Individualne razlike u afektivnoj domeni uključuju faktore kao što su stavovi i motivacija (MacIntyre, 2002). Ovo istraživanje bilo je usredotočeno na to kako stavovi učenika prema predmetu također mogu utjecati na postignuća. Stav je emocionalni odgovor osobe koji odražava njegove/njezine emocije i zadivljenost nečim (Sunal i Haas, 2003). Odnosi se na tendenciju neke osobe da na događaje, organizacije, ljude ili stvari odgovori na prikladan ili neprikladan način (Ajzen, 2005). Smatra se da su stavovi učenika prema predmetu važan faktor koji utječe na njihova postignuća. Prije provedena istraživanja o stavovima pokazala su također da je stav prema predmetu jedan od važnih faktora koji utječu na postignuća. Na primjer, Ma i Kishor (1997) proveli su metaanalizu i ukazali na vezu između postignuća u matematici i stavova učenika prema tom predmetu. Slično tome, Petscher (2010) je proveo istraživanje o postignućima u području čitanja te je došao do spoznaje da postoji snažna veza između postignuća u čitanju i stava prema čitanju kod djece osnovnoškolske dobi. Očito je, dakle, da su stavovi također važni za postignuća učenika u predmetu Društvene znanosti. Štoviše, jedan je od glavnih ciljeva toga predmeta razvijati pozitivne stavove koji mogu potaknuti učenike na učinkovito učenje (Sunal i Haas, 2003). Društvene znanosti su multidisciplinarni predmet koji uključuje mnoge različite discipline. Stoga negativne predodžbe o njemu u budućnosti mogu izazvati negativne stavove učenika prema tim disciplinama. Zbog svih navedenih razloga smatrali smo bitnim odrediti stavove prema predmetu Društvene znanosti, kao i faktore koji su s njima povezani.

## **Stilovi učenja, strategije učenja, stavovi i postignuća**

Glavni je cilj predmeta Društvene znanosti pomoći učenicima da budu aktivni i utjecajni građani u životu društva. Stoga je jako bitno da taj predmet bude smislen i uspješan. Kako bi se poboljšala učenička postignuća, najvažnije je usredotočiti se na poboljšanje postignuća svih učenika koji su sudionici obrazovnog sustava (Dunn i Honigsfeld, 2013). S ciljem poboljšanja akademskih postignuća svih učenika, faktori koji utječu na usvajanje znanja trebali bi biti jasno određeni. Prepoznati izvore razlika između akademskih postignuća učenika i problema s postignućima od iznimne je važnosti jer utječe na odluke koje će se donositi u obrazovanju (Rimfeld, Kovas, Dale, i Plomin, 2016). Poboljšanje akademskih postignuća već je godinama jedna od najčešćih tema istraživanja u području obrazovanja. Na akademska postignuća utječu faktori poput inteligencije, kognitivnih sposobnosti, motivacije i stilova učenja, kao i organizacijski faktori i okruženje (Akbaba Altun i Çakan, 2008). Faktori koji utječu na akademska postignuća mogu se ispitivati unutar dviju kategorija: mentalni faktori i nementalni faktori. Mentalni faktori odnose se na sposobnost učenika da shvati usvojeno znanje, a nementalni faktori odnose na individualne faktore, motivaciju, socioekonomski status itd. (Deka, 1993). U ovom su se istraživanju akademska postignuća interpretirala tako što su u obzir uzeti individualni faktori. Kada se promatraju istraživanja o akademskim postignućima, jasno je da se ona razlikuju s obzirom na individualne faktore.

Postignuća su povezana i s individualnim afektivnim razlikama poput motivacije (Steinmayr i Spinath, 2009), samopouzdanja (Chen, Yeh, Hwang, i Lin, 2013), interesa i stavova (Graham, Berninger, i Fan, 2007; Ma i Kishor, 1997), kao i s individualnim kognitivnim razlikama poput stilova učenja, višestrukih inteligencija (Snyder, 2000) i strategija učenja (Ocak i Yamaç, 2013). Istraživanja pokazuju da su akademska postignuća povezana sa stilovima učenja, strategijama učenja i stavovima učenika. Nemoguće je smatrati da postignuća u predmetu Društvene znanosti ne ovise o istim tim faktorima. Cilj je ovog istraživanja pokazati kako stilovi učenja učenika u osnovnoj i srednjoj školi, njihove strategije učenja i stavovi prema predmetu utječu na njihova postignuća i uspjeh.

### **Model**

Jedan od ciljeva ovog istraživanja bio je izraditi model koji ističe vezu između uspjeha u predmetu Društvene znanosti i stilova učenja, strategija učenja i stava prema predmetu. Glavni okvir izrađenog modela jest ideja da su te varijable iznimno važne za postizanje smislenog i permanentnog učenja i znanja i da stoga utječu na akademski uspjeh.

Ljudi se međusobno razlikuju u mnogim područjima, a najviše razlika postoji u okruženju u kojem se učenje odvija jer se ljudi međusobno razlikuju po svojim interesima, potrebama, izvorima motivacije, stavovima i stilovima učenja (Al-Hebaishi, 2012). Stoga je iznimno bitno da se u obzir uzmu individualne razlike učenika kako bi

oni mogli naučiti ono što ih se poučava i kako bi vidjeli da su uspješni. Postoje brojna istraživanja koja ističu vezu između individualnih razlika i učenja. Kada se analiziraju ta istraživanja, može se primijetiti da je razlog tomu njezin doprinos uspjehu u učenju i poučavanju. Stilovi učenja naglašavaju različite načine učenje kod različitih pojedinaca (Pashler, McDaniel, Rohrer, i Björk, 2009). Kada se radi o učenju, svaki pojedinac ima različite osobine koje su mu dane rođenjem (Holtham i Courtney, 2001). Čak se može reći i da je stil učenja pojam koji oblikuju urođene osobine i da se ljudi rađaju s različitim stilovima učenja.

Jedna od individualnih razlika koju ističu mnoga istraživanja o vezi između učenja i akademskog uspjeha jesu strategije učenja, koje podrazumijevaju da pojedinci svjesno preuzimaju veću odgovornost kako bi mogli usvojiti znanje. Uistinu, strategije učenja se definiraju kao namjerno ponašanje učenika kojim žele poboljšati proces učenja (Mayer, 1988). Strategije učenja i stilovi učenja u međusobnoj su interakciji jer se učenici koriste svojim urođenim stilovima učenja kada izrađuju vlastite strategije učenja, tj. oni biraju i koriste se strategijama učenja u skladu s vlastitim urođenim stilovima učenja. Istraživanja koja se bave vezom između stilova učenja i strategija učenja idu u prilog navedenom stajalištu (Carson i Longhini, 2002; Ehrman i Oxford, 1990; Pei-Shi, 2012). Stoga je stav da stilovi učenja utječu na strategije učenja i da strategije učenja, shodno tomu, utječu na uspjeh jedno od ključnih polazišta ovog istraživanja. Nadalje, jedna od najvažnijih osnova modela jest da afektivni faktori utječu na uspjeh. Smatra se da stavovi učenika prema predmetu utječu na njihov uspjeh, pogotovo u predmetima kao što su Društvene znanosti, za koji se općenito smatra da je dosadan. Također se smatra da će učenici koji su razvili strategije učenja u skladu sa svojim urođenim stilovima učenja učiti na sustavniji način, koji će zato imati pozitivan utjecaj na njihov stav prema predmetu. U ovom istraživanju namjeravaju se ispitati varijable koje utječu na postignuća učenika u predmetu Društvene znanosti putem modela koji je izrađen s pomoću strukturalnog modeliranja. Strukturalni model izrađen je kombiniranjem stilova učenja, strategija učenja i stavova prema predmetu Društvene znanosti, za koje se smatra da utječu na postignuća učenika u tom predmetu. Tako se došlo do spoznaje kako stilovi učenja, strategije učenja i stavovi prema predmetu Društvene znanosti kod učenika osnovne i srednje škole utječu na postignuća u tom predmetu.

Iz istraživanja provedenih na sličnim uzorcima ispitanika, a u kojima se ispitala veza između spomenutih varijabli, može se vidjeti da ne postoji istraživanje kojim se ispitivao zajednički utjecaj stilova učenja, strategija učenja i stavova na uspjeh. Slično tome, kada se analiziraju istraživanja o postignućima u predmetu Društvene znanosti, mogu se pronaći neka koja su se bavila pojedinačno utjecajem stilova učenja (Bilgin i Durmuş, 2003; Yurtseven, 2010), strategijama učenja (Çelikkaya i Kuş, 2010) i stavovima prema predmetu (Tay i Akyürek Tay, 2006) na postignuća učenika u tom predmetu. Çetingöz i Özkal (2009) istraživali su upotrebu strategija učenja i stavove koje su dobri i slabi učenici imali prema predmetu Društvene znanosti. S pomoću

rezultata istraživanja uočeno je da se uspješni učenici koji su imali pozitivan stav prema nastavi koriste većim brojem strategija. Dikbaş i Kaf Hasirci (2008) tvrde da primjena strategija učenja u predmetu Društvene znanosti ima pozitivan utjecaj i na akademska postignuća i na stavove. Kada se analiziraju istraživanja o postignućima u predmetu Društvene znanosti, analiziraju se samo nezavisne varijable koje su povezane s akademskim postignućima. Međutim, smatra se da su sve te varijable međusobno povezane i da mogu utjecati jedna na drugu. Stoga se ovo istraživanje razlikuje od ostalih jer mu je cilj objasniti postignuća u predmetu Društvene znanosti s pomoću varijabli: stil učenja, strategija učenja i stav. Zbog toga se smatra da će istraživanje doprinijeti području nastave Društvenih znanosti u smislu da će ponuditi novi model u kojem se cjelovito sagledaju interakcije između stilova učenja, strategija učenja i stavova.

## **Metoda**

### ***Model istraživanja***

U ovom istraživanju primijenjen je relacijski model kojim su se pokušala interpretirati postignuća učenika u predmetu Društvene znanosti, zajedno s njihovim stilovima učenja, strategijama učenja i stavovima prema predmetu kao medijacijskim varijablama. Relacijski model jest model istraživanja koji ima za cilj odrediti postojanje i stupanj kovarijacije između dviju ili više varijabli (Fraenkel i Wallen, 2006). U istraživanju su se ispitivala postignuća učenika u predmetu Društvene znanosti u kontekstu njegove veze s varijablama: stilovi učenja, strategije učenja i stavovi učenika prema predmetu.

### ***Fokusna skupina***

Uzorak se sastojao od 320 učenika (172 ženskog i 148 muškog spola) koji su pohađali osnovne i srednje škole na području provincije Sakarya u Turskoj. Za pronalaženje sudionika u istraživanju koristila se metoda slučajnog uzorkovanja. Učenici koji su činili fokusnu skupinu pohađali su različite razrede. Na primjer, 62 učenika imala su ocjene iz Društvenih znanosti na izvješćima o uspjehu iz četvrtog razreda, 96 učenika imalo je ocjene iz Društvenih znanosti na izvješćima o uspjehu iz petog razreda, 78 učenika imalo je ocjene iz Društvenih znanosti na izvješćima o uspjehu iz šestog razreda, a 84 učenika imala su ocjene iz Društvenih znanosti na izvješćima o uspjehu iz sedmog razreda. Opća struktura škola koje su sudjelovale u istraživanju bila je slična. Model koji je testiran u istraživanju nije sadržavao varijable razred i spol. One su samo spomenute kao karakteristike fokusne skupine.

### ***Alati za prikupljanje podataka***

Za prikupljanje podataka koristile su se „Skala stilova učenja” i „Skala stavova prema predmetu Društvene znanosti”, a „ocjene iz izvješća o uspjehu” koristile su se za određivanje postignuća u predmetu Društvene znanosti.

*Skala stilova učenja*: podatci povezani sa stilovima učenja učenika prikupljeni su s pomoću „Skale stilova učenja” koju je razradio Gökdağ (2004) na turskom jeziku. Skala Likertova tipa sastojala se od 5 stupnjeva i 28 tvrdnji te je bila trodimenzionalna, sa sljedećim dimenzijama: „Vizualnom” (na primjer: *Bolje učim kada vidim model nečega*), „Auditivnom” (na primjer: *Problem si pretočim u verbalni oblik kada ga rješavam*) i „Kinestetički” (na primjer: *Bolje učim kada to i radim*). Svaka dimenzija sastojala se od 5 tvrdnji koje su imale pozitivna značenja. Rezultat dobiven s pomoću skale bio je u rasponu između 28 i 140. Dok je Cronbachov koeficijent pouzdanosti skale bio 0,7, koeficijent unutarnje konzistencije bio je 0,83.

*Skala strategija učenja*: skalu na turskom jeziku izradili su Çelikkaya i Kuş (2010) kako bi odredili način na koji učenici uče gradivo predmeta Društvene znanosti. Skala se sastojala od 35 tvrdnji koje su se odnosile na četiri strategije: interpretaciju, pažnju, ponavljanje i socio-afektivnu komponentu. Stupanj slaganja bio je u rasponu: „uvijek”, „često”, „ponekad”, „rijetko” i „nikad”. Od proučavanih varijabli njih 12, koje su bile uključene u skalu, bile su povezane s interpretacijom (na primjer: *Istražujem primjere iz mog bliskog kruga*), 3 su bile povezane s pažnjom (na primjer: *Podvlačim bitne dijelove*), 5 je bilo povezano s ponavljanjem (na primjer: *Ponovno pročitam i ponovim bilješke koje vodim pod nastavom*), a 15 ih je bilo povezano sa socioafektivnom strategijom (na primjer: *Učim putem priče sa zamišljenom osobom*). Navedena distribucija utemeljena je na važnosti strategija. Važnost svake strategije bitna je za distribuciju broja tvrdnji u svakoj dimenziji. Cronbach alfa koeficijent unutarnje konzistencije skale bio je 0,80, a koeficijent pouzdanosti unutarnje konzistencije bio je 0,90.

*Skala stavova prema predmetu Društvene znanosti*: podatci koji se odnose na stavove učenika prema predmetu Društvene znanosti dobiveni su s pomoću „Skale stavova prema predmetu Društvene znanosti” koju je izradio Çalışkan (2009) na turskom jeziku. To je skala Likertova tipa, a sastojala se od 33 tvrdnje (21 tvrdnja odnosila se na pozitivne stavove, a 12 tvrdnji odnosilo se na negativne stavove). Skala je imala strukturu od četiri faktora, i to: 9 tvrdnji za „Važnost predmeta” (na primjer: *Mislim da me ono što učim u predmetu Društvene znanosti priprema za društveni život*), 10 tvrdnji za „Privlačnost predmeta” (na primjer: *Ne zanimaju me društvene teme*), 10 tvrdnji za „Sadržaj predmeta” (na primjer: *Uživam učiti o povijesnim temama u Društvenim znanostima*) i 4 tvrdnje za „Aktivnosti u predmetu” (na primjer: *Zabavljam se dok učim ono što se poučava u predmetu Društvene znanosti*). Koeficijent unutarnje konzistencije skale bio je 0,93. Međutim, koeficijent unutarnje konzistencije skale, koji je izračunat na temelju podataka iz ovog istraživanja, bio je 0,89.

*Ocjene iz izvješća o uspjehu*: ocjene iz izvješća o uspjehu na kraju školske godine koristile su se za određivanje postignuća učenika u predmetu Društvene znanosti. Postignuća svakog učenika u tome predmetu odredili su istraživači uvidom u dokumente o prolaznim ocjenama iz pojedinih predmeta koji se čuvaju u školskim arhivama. Ocjene iz izvješća o uspjehu sastoje se od srednje prosječne ocjene učenika iz pojedinog predmeta, koja se računa na temelju ocjena iz ispita i akademskog rada

(projekata, rješavanja zadataka, aktivnosti itd.) tijekom polugodišta. Prikupljene ocjene iz predmeta Društvene znanosti pretvorene su u standardne ocjene za svaki razred i nakon toga su se koristile u statističkim analizama.

### **Analiza podataka**

U ovom istraživanju pokušala se ispitati veza između postignuća u predmetu Društvene znanosti i učeničkih stilova učenja, strategija učenja i stavova prema predmetu. S tim u vidu je u okviru varijabli koje utječu na postignuća učenika u predmetu Društvene znanosti testiran osnovni model s pomoću analize putanje uključene u strukturalno modeliranje. Uz to je preračunavanje ocjena iz uspjeha u predmetu Društvene znanosti u standardne ocjene provedeno izračunavanjem t vrijednosti, veza između varijabli određena je s pomoću korelacijske analize, a normalnost je utvrđena putem Kolmogorov-Smirnovljeva testa. Kada su utvrđene vrijednosti Kolmogorov-Smirnovljeva testa, moglo se zaključiti da su podatci imali normalnu distribuciju kod stilova učenja, strategija učenja i stava. Normalnost je provjerena nakon što su ocjene (ocjene na kraju razreda) preračunate u standardne ocjene. Vrijednost koeficijenta asimetrije za ocjene postignuća u razredima bila je 0,089, a vrijednost zaobljenosti distribucije bila je -0,960. Prema tim vrijednostima može se tvrditi da je normalna distribucija podataka odgovarajuća. K tomu, kada se analizira histogram ocjena, može se reći da su podatci normalno distribuirani. Analize su napravljene s pomoću SPSS 15 i AMOS 7.0 računalnih programa.

### **Rezultati**

U ovom odjeljku prikazuju se rezultati testiranja modela kojima se mogu interpretirati postignuća učenika u predmetu Društvene znanosti.

Testirane su tri glavne hipoteze istraživanja u vezi s modelom koji se testiralo putem analize putanje: stavovi prema predmetu bili su uključeni kao medijacijska varijabla u prvi, drugi i treći model, s obzirom na predviđanje razine postignuća u predmetu Društvene znanosti u stilovima učenja. Prije testiranja modela ispitane su, s pomoću analize putanje, adekvatnost korelacija između relevantnih varijabli i deskriptivna statistika.

#### **Tablica 1**

U tablici 1 ispitivanje binarnih i parcijalnih korelacija između postignuća učenika u predmetu Društvene znanosti i eksplanatornih varijabli pokazalo je da postoje značajne korelacije između vrijednosti postignuća i relevantnih varijabli, osim kod auditivnog stila učenja. Iako se to činilo nepogodnim za testiranje modela, odlučeno je da se model ipak može testirati jer su postojale umjerene korelacije između ostalih varijabli. Može se reći da su sve od spomenutih dobivenih korelacijskih vrijednosti bile prikladne za testiranje modela.

Nakon što su određeni koeficijenti korelacije između varijabli, putem Kolmogorov-Smirnovljeva testa utvrđeno je da su svi podatci imali normalnu distribuciju. Stoga je

provedeno testiranje modela kako bi se interpretirala postignuća s pomoću metode najveće vjerojatnosti strukturalnog modeliranja.

#### Slika 1

Slika 1 prikazuje rezultate analize testa prvog modela. Analiza koeficijenata prilagodbe testiranog modela pokazala je da je vrijednost hi-kvadrata bila značajna [ $\Delta(4)=17,7$ ;  $\Delta=4,43$ ;  $p<0,001$ ], a da su koeficijenti prilagodbe bili: RMSEA=0,10, CFI=0,96, IFI=0,96, NFI=0,95, TLI=0,90, GFI=0,98 i AGFI=0,92. Vrijednosti prilagodbe poput AGFI, GFI, CFI, IFI, NFI i TLI, koji su iznad 0,90 (Jöreskog i Sörbom, 1993; Tabachnick i Fidel, 2001), vrijednost dobivena prilagodbom vrijednosti hi-kvadrata sa stupnjem slobode ispod 5 (Kline, 2005; Tabachnick i Fidel, 2001) i vrijednost RMSEA ispod 0,10 pokazuju da model ima dobru vrijednost prilagodbe te je stoga prihvatljiv (Schweizer, Moosbrugger i Schermelleh-Engel, 2003; Tabachnick i Fidel, 2001). Zbog toga nije bilo potrebno ispitati indekse poboljšanja.

Ispitivanje rezultata o standardiziranim vrijednostima koji se tiču ukupnog utjecaja s obzirom na prvi model pokazalo je da je ukupna mogućnost predviđanja stavova prema predmetu s pomoću stilova učenja 0,15 bodova, njihova mogućnost predviđanja postignuća 0,18 bodova, a ukupna mogućnost predviđanja postignuća s pomoću stava prema predmetu 0,34 boda.

Ispitivanje rezultata o standardiziranim vrijednostima koje pripadaju izravnim utjecajima pokazalo je da je direktna mogućnost predviđanja stavova prema predmetu s pomoću stilova učenja 0,15 bodova, njihova mogućnost izravnog predviđanja postignuća 0,13 bodova, a mogućnost izravnog predviđanja postignuća s pomoću stava prema predmetu 0,34 boda. Drugim riječima, postoji razlika samo u mogućnosti predviđanja postignuća s pomoću stilova učenja.

Ispitivanje rezultata o standardiziranim vrijednostima koje pripadaju neizravnim utjecajima pokazalo je da je mogućnost neizravnog predviđanja postignuća s pomoću stilova učenja 0,05 bodova. To ukazuje na činjenicu da stilovi učenja imaju i izravan i neizravan utjecaj (putem stavova prema predmetu) na učenička postignuća. Drugim riječima, stavovi prema predmetu imaju indirektan učinak na utjecaj stilova učenja učenika na postignuća u predmetu Društvene znanosti.

Kada se svi dobiveni rezultati koji se odnose na prvi model, a koji su spomenuti u prethodnom odlomku, sagledaju zajedno, može se vidjeti da su stilovi učenja učenika predvidjeli njihove stavove prema predmetu Društvene znanosti [ $b=0,15$ ;  $p<0,05$ ] i njihova postignuća [ $b=0,13$ ;  $p<0,05$ ] te da su stavovi učenika prema predmetu predvidjeli njihova postignuća [ $b=0,34$ ;  $p<0,01$ ]. Osim toga, stilovi učenja imali su neizravan utjecaj na njihova postignuća u predmetu Društvene znanosti, a stavovi prema predmetu prilagodili su taj utjecaj.

#### Slika 2

Slika 2 prikazuje rezultate analize testa drugoga modela. Analiza koeficijenata prilagodbe testiranog modela pokazala je da je vrijednost hi-kvadrata bila značajna



$[\Delta\chi^2(8)=21,7; \Delta\chi^2/df=2,71; p<0,01]$ , a koeficijenti prilagodbe bili su: RMSEA=0,07, CFI=0,98, IFI=0,98, NFI=0,97, TLI=0,97, GFI=0,98 i AGFI=0,94. Kako su dobiveni koeficijenti prilagodbe bili dovoljno visoki, smatralo se da nije potrebno ispitivati indekse poboljšanja. Stoga je test modela prihvaćen u onom obliku u kojemu je bio u svojoj originalnoj inačici.

Ispitivanje rezultata o standardiziranim vrijednostima koje se tiču ukupnog utjecaja s obzirom na drugi model pokazalo je da je ukupna mogućnost predviđanja stavova prema predmetu s pomoću strategija učenja 0,29 bodova, njihova ukupna mogućnost predviđanja postignuća 0,22 boda, a ukupna mogućnost predviđanja postignuća s pomoću stava prema predmetu 0,32 boda.

Ispitivanje rezultata o standardiziranim vrijednostima koje pripadaju izravnim utjecajima pokazalo je da je mogućnost predviđanja stavova prema predmetu s pomoću strategija učenja 0,29 bodova, njihova mogućnost izravnog predviđanja postignuća 0,13 bodova, a mogućnost izravnog predviđanja postignuća s pomoću stava prema predmetu 0,32 boda. Drugim riječima, strategije učenja čine razliku u mogućnosti predviđanja postignuća.

Ispitivanje rezultata o standardiziranim vrijednostima koje pripadaju neizravnim utjecajima pokazalo je da je mogućnost predviđanja postignuća s pomoću strategija učenja 0,09 bodova. To ukazuje na činjenicu da strategije učenja imaju i izravan i neizravan utjecaj (posredstvom stavova prema predmetu) na postignuća učenika. Drugim riječima, stavovi prema predmetu imaju neizravan učinak na utjecaj strategija učenja na postignuća učenika u predmetu Društvene znanosti.

Kada se svi dobiveni rezultati koji se odnose na drugi model, a koji su spomenuti u prethodnom odlomku, zajedno sagledaju, može se vidjeti da su strategije učenja učenika predvidjele njihove stavove prema predmetu Društvene znanosti [ $b=0,29; p<0,01$ ] i njihova postignuća [ $b=0,13; p<0,05$ ] te da su stavovi učenika prema predmetu predvidjeli njihova postignuća [ $b=0,32; p<0,01$ ]. Osim toga, strategije učenja imale su neizravan utjecaj na njihova postignuća u predmetu Društvene znanosti, a stavovi prema predmetu taj su utjecaj prilagodili.

### Slika 3

Slika 3 prikazuje rezultate analize testa trećega modela. Analiza koeficijenata prilagodbe testiranog modela pokazala je da je vrijednost hi-kvadrata bila značajna [ $\Delta\chi^2(23)=102,13; \Delta\chi^2/df=4,44; p<0,001$ ], a koeficijenti prilagodbe bili su: RMSEA=0,10, CFI=0,93, IFI=0,93, NFI=0,91, TLI=0,90, GFI=0,93 i AGFI=0,86. Kako su dobiveni koeficijenti prilagodbe bili prilično visoki, smatralo se da nije potrebno ispitivati indekse poboljšanja. Stoga je test modela prihvaćen u onom obliku u kojemu je bio u svojoj originalnoj verziji, a u kojemu je bio analiziran.

Ispitivanje rezultata o standardiziranim vrijednostima koje se tiču ukupnog utjecaja s obzirom na treći (finalni) model pokazalo je da je ukupna mogućnost predviđanja strategija učenja s pomoću stilova učenja 0,43 boda, njihova ukupna mogućnost predviđanja postignuća 0,19 bodova, a ukupna mogućnost predviđanja postignuća

s pomoću stavova prema predmetu 0,32 boda. K tomu je ustanovljeno da je ukupna mogućnost predviđanja stavova prema predmetu s pomoću strategija učenja 0,25 bodova, njihova ukupna mogućnost predviđanja postignuća 0,17 bodova, a da je mogućnost predviđanja postignuća s pomoću stavova prema predmetu bila 0,32 boda.

Ispitivanje rezultata o standardiziranim vrijednostima koje pripadaju izravnim utjecajima pokazalo je da je mogućnost izravnog predviđanja strategija učenja s pomoću stilova učenja 0,43 boda, njihova mogućnost izravnog predviđanja stavova prema predmetu 0,09 bodova, a mogućnost izravnog predviđanja postignuća 0,09 bodova. Osim toga, utvrđeno je da je mogućnost izravnog predviđanja stavova prema predmetu s pomoću strategija učenja 0,25 bodova, mogućnost izravnog predviđanja postignuća s pomoću strategija učenja 0,09 bodova, a mogućnost izravnog predviđanja postignuća s pomoću stavova prema predmetu 0,32 boda. Stoga se može vidjeti da je uočena razlika samo u mogućnosti predviđanja postignuća s pomoću stilova učenja i strategija učenja i mogućnosti predviđanja stavova s pomoću stilova učenja.

Ispitivanje rezultata o standardiziranim vrijednostima koje pripadaju neizravnim utjecajima pokazalo je da je došlo do promjene od 0,10 bodova u mogućnosti neizravnog predviđanja postignuća s pomoću stilova učenja, a do promjene od 0,08 bodova došlo je u mogućnosti neizravnog predviđanja postignuća s pomoću strategija učenja. Promjena od 0,11 bodova dogodila se u mogućnosti neizravnog predviđanja stavova prema predmetu s pomoću stilova učenja. To ukazuje na činjenicu da stilovi učenja imaju i izravan i neizravan utjecaj (preko strategija učenja i stavova prema predmetu) na učenička postignuća. Drugim riječima, strategije učenja i stavovi prema predmetu imaju neizravan učinak na utjecaj strategija učenja na postignuća u predmetu Društvene znanosti.

Kada se svi dobiveni rezultati koji se odnose na treći (finalni) model, a koji su spomenuti u prethodnom odlomku, zajedno sagledaju, može se vidjeti da su stilovi učenja učenika predvidjeli njihove strategije učenja [ $b=0,43$ ;  $p<0,01$ ], njihove strategije učenja predvidjele su njihove stavove prema predmetu Društvene znanosti [ $b=0,25$ ;  $p<0,01$ ], a njihovi stavovi prema predmetu predvidjeli su njihova postignuća [ $b=0,32$ ;  $p<0,01$ ] u značajnoj mjeri. K tomu, može se vidjeti da stilovi učenja učenika nisu predvidjeli njihove stavove prema predmetu [ $b=0,09$ ;  $p>0,05$ ] i njihova postignuća [ $b=0,08$ ;  $p>0,05$ ] u značajnoj mjeri, a strategije učenja nisu značajno predvidjele njihova postignuća [ $b=0,09$ ;  $p<0,05$ ]. Iako nije pronađena značajna razlika između pojedinih varijabli, bilo je slabog i neizravnog utjecaja (Kline, 2005) između varijabli kada se razmatrala veličina učinka standardiziranih koeficijenata putanje. Svi ti rezultati upućuju na to da stilovi učenja učenika imaju utjecaj na postignuća posredstvom strategija učenja i stavova prema predmetu.

## Rasprava

Ovim istraživanjem pokušala su se objasniti postignuća učenika u predmetu Društvene znanosti s obzirom na njihove stilove učenja, strategije učenja i stavove prema tom predmetu. Model koji je testiran u ovom istraživanju uspio je objasniti

postignuća u predmetu Društvene znanosti. Drugim riječima, stilovi učenja, strategije učenja i stavovi prema predmetu općenito su objasnili učenička postignuća u tom predmetu. Moglo se vidjeti da su eksplanatorne varijable na pozitivan način interpretirale postignuća učenika u tom predmetu. Stilovi učenja, koji su predstavljali prvu eksplanatornu varijablu, izravno su i neizravno, pozitivno i u značajnoj mjeri predviđjeli postignuća u prvom modelu. Iako se njihova mogućnost izravnog predviđanja smanjila u finalnom modelu, neizravno su i dalje imali značajan učinak. Ispitivanje finalnog modela pokazuje da su stilovi učenja prenijeli svoj eksplanatorni učinak na strategije učenja. To bi mogao biti razlog zbog kojeg se njihova mogućnost izravnog predviđanja postignuća i predviđanja postignuća s pomoću stavova u finalnom modelu smanjila. S druge pak strane, činjenica da su strategije učenja jače povezane sa stavovima, mogla je smanjiti utjecaj stilova učenja na stavove. Na kraju, istaknuo se finalni model u kojemu je ukupan utjecaj stilova učenja na interpretaciju postignuća u predmetu Društvene znanosti bio pozitivan i značajan. Slično tome, Vaishnav (2013) je otkrio vezu između razina postignuća srednjoškolaca i njihovih stilova učenja. Matthews (1996) je naveo da postoji veza između predodžbi o postignućima kod srednjoškolaca kada se radi o njima samima i o njihovim stilovima učenja. Pregled relevantne literature pokazuje da postoje brojna istraživanja u kojima je uočena interakcija između stilova učenja i učeničkih postignuća, što također ide u prilog rezultatima ovog istraživanja (Ikitde i Edet, 2013; Van Zwanenberg, Wilkinson, i Anderson, 2000). Razmatranjem modela koji je izrađen u ovom istraživanju i rezultata različitih istraživanja koja se bave ovom temom, može se zaključiti da su stilovi učenja važan čimbenik koji utječe na učenička postignuća u predmetu Društvene znanosti.

Strategije učenja izravno su i neizravno, i u značajnoj mjeri pozitivno, predviđjele postignuća u prvom modelu. Iako se njihova mogućnost izravnog predviđanja smanjila u finalnom modelu, i dalje su imale značajan utjecaj putem stavova prema predmetu. Strategije učenja općenito su pozitivno i značajno utjecale na učenička postignuća. Taj rezultat također je u skladu s prije provedenim istraživanjima (Diseth i Kobbeltvedt, 2010; Judd, 2005). Nadalje, rezultati ovog istraživanja impliciraju da primjena strategija učenja kod učenika ima pozitivan utjecaj i na njihova postignuća u predmetu Društvene znanosti i na njihove stavove prema tom predmetu. Prijašnja istraživanja o toj temi imala su slične rezultate kada se radi o interakciji između strategija učenja i postignuća i stavova, iako u različitim područjima. Na primjer, Dan i Todd (2013) su utvrdili da se oni učenici koji su usredotočeni na uspjeh koriste većim brojem učinkovitih strategija i da imaju pozitivne stavove prema predmetu. Osim toga, neka su istraživanja pokazala da postoji veza između primjena strategija učenja i učinkovitih karakteristika. Na primjer, Yang (1999) je naveo da postoji veza između uvjerenja o učenju engleskog jezika i strategija učenja koje se koriste. Općenito govoreći, može se reći da oni učenici koji se koriste strategijama učenja mogu aktivno kontrolirati proces učenja i da ne gube vrijeme (Bisland, 2005). To se može smatrati jednim od razloga pozitivnog utjecaja strategija učenja na stavove. Stoga se može reći da strategije učenja imaju prilično važan utjecaj na stavove i postignuća, pa se tako

može zaključiti da strategije učenja imaju glavnu ulogu u eliminaciji negativnih stavova prema predmetu Društvene znanosti, a samim time i na poboljšanje postignuća.

Drugi važan rezultat ovog istraživanja odnosi se na činjenicu da su pozitivni stavovi prema predmetu Društvene znanosti poboljšali postignuća učenika u tom predmetu. Pozitivne predodžbe učenika o predmetu Društvene znanosti poboljšale su njihova postignuća u tom predmetu. Rezultati ovog istraživanja u skladu su s rezultatima prije provedenih istraživanja i pokazuju da pozitivni stavovi učenika prema predmetu podižu razinu postignuća (Ward, 2013). Isto tako, Walberg i Weinstein (1982) navode da postoji pozitivna veza između postignuća u predmetu Društvene znanosti i stavova prema tom predmetu. Na temelju rezultata istraživanja može se tvrditi da su stavovi prilično važan faktor koji utječe na postignuća u predmetu Društvene znanosti. Nastavnici bi to trebali uzeti u obzir i uložiti napor kako bi učenicima omogućili razvijanje pozitivnih stavova prema predmetu Društvene znanosti i uspješnost u tom predmetu.

Ovo je istraživanje pokazalo da stilovi učenja imaju utjecaj u interpretaciji postignuća u predmetu Društvene znanosti putem strategije učenja i stavova prema tom predmetu. Analiza finalnog modela pokazuje da se, kada su strategije učenja bile uključene u model, mogućnost da se stilovima učenja objasne stavovi i postignuća smanjila. Međutim, zaključeno je da stilovi učenja imaju jak utjecaj na strategije učenja, kako se vidi na modelu. S obzirom na to stilovi učenja su možda više utjecali na postignuća i stavove putem strategija učenja. Ovaj je rezultat smislen jer se smatra da primjena strategija učenja ovisi o preferiranim stilovima učenja (Oxford, 2003). Zapravo, literatura o toj temi sadrži neka istraživanja koja se bave vezom između stilova učenja i strategija učenja (Liu i Reed, 1994).

Zbog interpretiranja postignuća u predmetu Društvene znanosti ovaj se model smatra značajnim jer je otkrio utjecaj stilova učenja, strategija učenja i stavova prema predmetu na učenička postignuća. Model je pokazao da stilovi učenja učenika mogu značajno predvidjeti njihove strategije učenja, njihove strategije učenja mogu značajno predvidjeti stavove prema tom predmetu, a njihovi stavovi prema predmetu mogu značajno predvidjeti njihova postignuća. Predmet Društvene znanosti općenito se smatra dosadnim i teškim. Zhao i Hoge (2005) su pokušali odrediti stavove učenika prema predmetu Društvene znanosti tako što su proveli intervjuje s učenicima. Zaključili su da učenici smatraju Društvene znanosti dosadnim i beskorisnim predmetom. Zbog toga potpuno ima smisla činjenica da stilovi učenja utječu na postignuća putem strategija i stavova. U skladu s tim nastavnici mogu pomoći učenicima u tome da razviju pozitivne stavove prema predmetu Društvene znanosti tako što će uzeti u obzir stilove učenja svojih učenika, a tako i strategije učenja koje su ti učenici razvili. Na taj se način veza između postignuća i Društvenih znanosti kao predmeta može poboljšati.

Na kraju, trebalo bi istaknuti da su neki alati za mjerenja u ovom istraživanju (za strategije, stavove i skale uspješnosti) razvijani i korišteni za Društvene znanosti. Zbog toga bi se rezultati i interpretacija na temelju tih rezultata trebali procjenjivati samo u sklopu predmeta Društvene znanosti.