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Determination of Students' Argument Levels in Argumentation-Based Social Studies Course *

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Abstract

The purpose of this research is to determine the argument levels formed by students in the seventh-grade social studies course in which argumentation-based teaching is performed. The study was carried out by action research of the qualitative research methods. A total of 33 seventh-grade students including 15 male and 18 female students continuing their education in Şehit Cem Özgül Secondary School located in the central district of Adıyaman province in the academic year 2013-2014 constituted the study group of the research. Social studies course was carried out based on argumentation in the class including the study group which was assigned to achieve the purpose of the research. The "Argumentation Assessment Scale" which was developed by Erduran, Simon, and Osborne (2004) was used to determine the level of arguments formed by students depending on the problem status. As a result of the analysis of the data obtained, it was concluded that in the seventh-grade social studies course, in which argumentation-based teaching was performed, students produced arguments at Level 2 during the first activity at the most, at Level 3 during the second activity, at Level 5 during the third activity and at Level 4 during the fourth and fifth activities. This finding can be interpreted as that a positive development occurred in students' argument levels through the process and that their argument levels and quality increased. Furthermore, it was also revealed that the argument levels of students showed differences in terms of weekly activities, that students used more rebuttal in the activities to which they felt closer such as career choice and included current issues in their arguments. Based on these results, suggestions were made such as a more frequent inclusion of the activities designed in accordance with the method of argumentation in the social studies curriculum and course books, and teachers' requirement to prepare environments in which they could include students into the argumentation process.

Keywords

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Introduction

Argumentation, a kind of structured scientific argument technique, is used in many fields of education. Argumentation which is based on the rhetoric used by Aristotle as the art of persuasion (Freeley & Steinberg, 2013) and which basically requires the defence of a claim using data, reasons, supportive and corrosive attracted attention as a teaching method after *The Uses of Argument* written by Toulmin in 1958 (Erduran, Simon, & Osborne, 2004). Although argumentation is a teaching method, it is also expressed as a process in which people are included consciously or unconsciously in everyday life. Zohar and Nemet (2002) stated that people use their argumentation skills by frequently and personally producing argument, listening to or assessing an argument in everyday life.

When the usage area of argumentation-based education in training in the world was analyzed, it was determined to be used in sciences including disciplines of mathematics (Yackel, 2001), biology (Dawson & Venville, 2013) and science (Duschl & Osborne, 2002), and in social studies including disciplines of history (Swartz, 2008) and social studies (Nussbaum, 2011). In the world and in Turkey, it was concluded that students' academic achievement increased in classes where this method was applied which was determined to be used more commonly in science education compared to other fields, that students' critical thinking, problem-solving and decision-making skills developed, and that argumentation process was affected by peer education (Felton & Kuhn, 2001; Gillies & Khan, 2009; Nussbaum, 2011; Chen & She, 2012).

Despite the above-mentioned benefits, argumentation method is still not widely used in the field of education. Therefore, students cannot produce a sufficient number and quality of arguments. Studies carried out revealed that people had difficulty while generating argument and that some variables such as age, gender, for knowledge and intelligence level affected the argumentation skills (Means & Voss, 1996; Kuhn, 1999). In their study carried out to determine the students' argument producing and using levels, Patronis, Potari, and Spiliotopoulou (1999) revealed that students could not produce arguments at the sufficient level during courses. It was stated that the establishment of discussion platforms in the class in accordance with the argumentation process where students could face real life problems could better develop this skill. In addition to this, the question form used in developing the argument levels of the students in the classroom environment designed in accordance with the argumentation process is also important. In this sense, it is necessary to use questions that will reveal the high-level thinking skills of the students. In the study carried out by Çalışkan (2011) for the purpose of assessing the questions prepared by the social science teachers, 3992 questions were examined in total between 2003 and 2009. The researcher that assessed the questions according to Bloom's Taxonomy expressed that most of the questions were at the level of knowledge and comprehension, and the questions at the level of practice, analysis, synthesis, and evaluation were quite rarely seen. The use of the argumentation process in classrooms will also contribute to the use of high-quality question forms.

Similarly, Nussbaum (2002) stated that a more frequent use of argumentation method during courses would develop students' thinking skills at a higher level. Furthermore, he stated that students' thinking skills could be developed and that they could create more effective arguments related to social issues by using argumentation method in social issues. Moreover, he also indicated that social and political issues in the social studies curriculum such as war, democracy, imperialism, and immigration provide students with the opportunity of creating quality arguments.

Argumentation, in addition to those mentioned, is accepted as an intellectual skill which is increasingly appreciated and has a vital importance to adapt to the 21st-century world. In this respect, giving students these skills at school should be an important educational purpose (Crowell & Kuhn, 2012). However, studies carried out around the world have suggested that students' argumentation skills are low and that sufficient importance is not given to the development of these skills at school (Weinstock, Neuman, & Glassner, 2006; Crowell & Kuhn, 2012).

Studies have suggested that argumentation-based activities are included in classes for a short time, and this period of time is not sufficient to develop argumentation skills of students, and they should be repeated at different times for the acquisition of this skill and its conversion to behavior. Argumentation process has a great potential through which students can gain different viewpoints and develop their communication skills. Assessing alternatives, classifying the evidence, interpreting texts and assessing the validity of scientific claims are seen as the components of a scientific argument (Chin & Osborne, 2010; Chen and She, 2012). Doğan (2012) emphasized that especially basing claims upon evidence in educational discussion activities was important in allowing students to gain a different viewpoint. In this respect, it could be possible to get students gain a skill of using evidence by giving place to argumentation method in the classes frequently.

When the usage status of argumentation-based teaching in the field of education in Turkey was analyzed, it was determined that it was more frequently used in the field of science, but it was not used sufficiently in the field of social studies and that there were very few studies in this field (Swartz, 2008; Nussbaum, 2011). In this study, argument levels of students are expected to be improved by using the argumentation-based teaching approach in social studies education.

Purpose of the Research

The purpose of this research is to improve the argument levels formed by students in the seventh-grade social studies course in which argumentation-based teaching is performed. Sub-aims were determined in accordance with the primary purpose of the research. The sub-aims of the research are as follows:

1. How has improved the argument levels formed by students in social studies course in which argumentation-based teaching is performed?
2. How has improved the argument levels formed by students in social studies course in which argumentation-based teaching is performed in terms of the activities performed?
3. How has improved the argument levels formed by students in social studies course in which argumentation-based teaching is performed in terms of the subjects?

Method

Research Model

Aiming to determine the argument levels formed by students in social studies course which is performed as argumentation-based, this study was carried out by action research of the types of qualitative research.

In this study, which was carried out for the development of argument levels formed by students in the seventh-grade social studies course which is performed as argumentation-based, the subject of "assessing and studying a teaching strategy" mentioned by Johnson (2014) was preferred as the research subject. In this study, argumentation method was used in the implementation of the fifth unit of the 7th grade social studies course. The main reason for the preference of this method which is not frequently used in social studies course was the fact that this method was considered to be appropriate for teaching a social studies course. In the studies carried out in the fields of science, this method was determined to improve the students' argument levels and thus their quality of argument during courses. Furthermore, argument levels formed by students can be improved by including activities suitable for this method in Social Studies course.

In line with the literature findings obtained regarding the planning of action research process, the action plan of this research was prepared together with the researcher and field experts. The process consisted of four main phases such as *planning*, *action*, *observation* and *assessment*, and each phase was detailed. The action research process followed in this study is shown as follows.

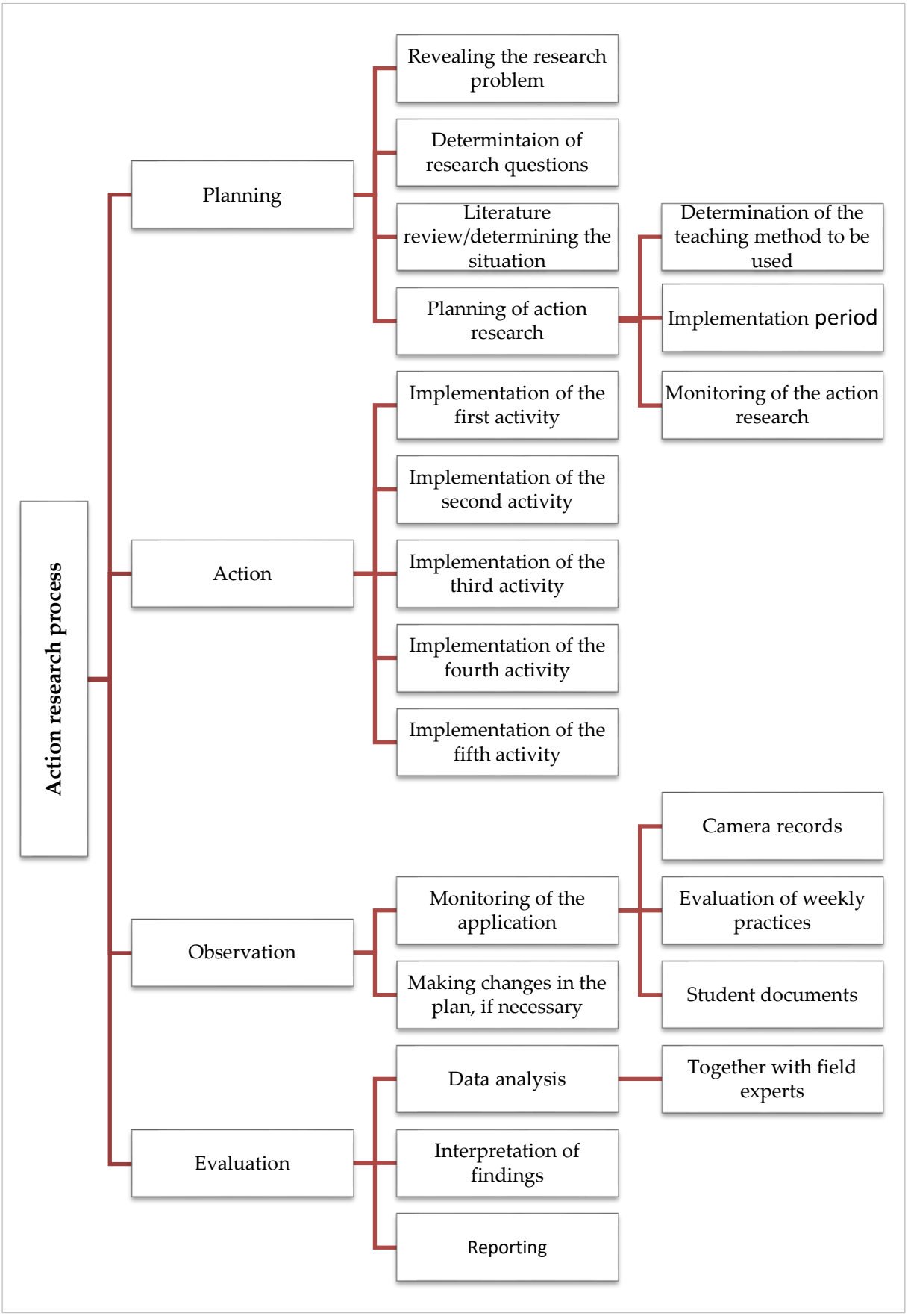

Figure 1. Action Research Process of the Research

Study Group

A total of 33 seventh-grade students including 15 male and 18 female students continuing their education in the central district of Adıyaman province in the academic year 2013-2014 constituted the study group of this research. These students were determined by criterion sampling of purposeful sampling methods. While determining the study group of this research, four criteria were used such as curriculum, school administration, accessibility to school and characteristics required in students with whom the study would be carried out.

Data Collection Tools

Activities including scenarios that would create dilemma among students as a data collection tool were designed in this study that was carried out for the purpose of determining the argument levels created by students in a seventh-grade social sciences lesson where argumentation-based teaching was performed. Each worksheet was designed for a different subject, and while some of them were based on real-life experiences, others were arranged through fictionalization. Worksheets to be used in this study were developed by the researcher together with the experts of the subject. The researcher first made a student attending the seventh grade read each activity he prepared and tested the scenarios included in the activities in terms of their suitableness to both the content and classroom level. The scenarios containing reading difficulties or that were weak in terms of meaning were corrected, and the students were made examine them again. After this examination, the activities that had been developed in the form of a draft were filled in by seventh-grade students in accordance with the argumentation process. The researcher applied the same practice to 29 seventh-grade classes in Altınşehir Secondary School in the central district of Adıyaman province. The social science teacher of the school performed this practice. The social science teacher working at this school was also made examine the practices, and the necessary corrections were made in the activities in line with the feedback received from the teacher. After these corrections, all activities were applied to the students studying in three different seventh-grade classes in another secondary school in Kahta district of Adıyaman province. The activities took their final shape after the feedback received from this school and reproduced in the sufficient number by making ready for the real practice.

The following points were taken into consideration while preparing the scenarios in the data collection tools.

- Care was taken to include content that fits the argumentation method while designing the scenarios in worksheets.
- Opinions were taken from the experts of three different fields in order to determine the appropriateness of the contents in this subject, and rearrangements were made in the scenarios in line with their opinions.
- An expert working in the Turkish department was made to examine the scenarios in order to determine their compliance with grammar rules, and they were rewritten in line with the feedback.
- Questions were prepared about the scenarios and added to the worksheet. The questions were prepared with the aim of revealing the argument levels of the students.
- Each scenario was applied to seventh-grade students at a school that was different from the practice school, and it was reviewed in terms of the compliance with both content and grammar rules.

After the worksheets including the scenarios had been prepared, a subject was taught in accordance with the argumentation based teaching in the practice process each week. The questions in the worksheets were first discussed in the form of small groups or whole class argument; then the students filled in their worksheets individually. Thus, it was tried to determine the argument levels of the students that could not participate in the process due to excitement or forgetfulness in writing. All of the classroom practices, especially where the discussions took place, were recorded using a camera. The worksheets used as the data collection tools in the research are explained below.

Activity 1: The Best for Adıyaman

This activity was designed for teaching the subject of the Life Coming from the Soil in "Economic and Social Life" unit of the seventh-grade social sciences lesson. The worksheet prepared for this activity includes two different scenarios that are related to the same subject but can create dilemma among the students. The content was considered totally fictionally and prepared together by the researcher and the subject area experts. As this study is the first activity, gap-filling questions containing argumentation components were included in addition to the discussion questions in order to ease the participation of the students in the argumentation process. The scenarios in this study were prepared considering the aforementioned points.

Activity 2: How do We Choose Our Professions?

This activity was designed for teaching the subject of Career Training in the Past and Present in "Economic and Social Life" unit of the seventh-grade social sciences lesson. This activity includes speech bubbles in which four students discuss important criteria about career choice. This activity was taken through adaptation from a similar study in the literature review (Tekeli, 2009). The speeches in the texts are totally fictional. The objective of this activity is to make the students realize the importance of their interests and skills while choosing their professions. The activity was turned into a worksheet that includes questions complying with the argumentation process by the researcher.

Activity 3: Who is Right? Ayşe or Her Parents?

This activity was designed for teaching the subject of Vocational Courses in Our Day in "Economic and Social Life" unit of the seventh-grade social sciences lesson. A story about a problem between a student and her family in her career choice is included in this activity. The story is taken from a book (Gürkaynak, Gözütok, Akipek, Bağlı, Erhürman, & Uluç, 1998) and left unfinished. First, questions that will ensure that students make discussions by using the argumentation components about the story were prepared in the worksheet designed for this activity. These questions were used in order to ensure that the students are included in the process by making a whole-class discussion. The students were asked to complete the story again by using the argumentation components in the second part of the worksheet.

Activity 4: Fish Death on the Fish Farm

This activity was designed for teaching the subject of The Coming of the Industry and What It Brings in "Economic and Social Life" unit of the seventh-grade social sciences lesson. Two different texts that emphasize the positive and negative aspects of the industry are included in this activity. One of the texts was taken from a real newspaper article (Milliyet, October 27, 2013), and another one was taken from the official website of Afyonkarahisar Municipality (Afyonkarahisar Municipality - www.afyon-bld.gov.tr). The activity consists of three parts, and each part has a structure that includes the argumentation components within themselves. Three different fictional characters, the prosecutor, lawyer, and judge, were created in the activity, and the activity was designed as a worksheet that these characters could fill in separately.

Activity 5: Let's Set Up a Foundation, Too

This activity was designed for teaching the subject of Foundations in "Economic and Social Life" unit of the seventh-grade social sciences lesson. The students were asked to set up a foundation in this activity. The researcher designed a foundation voucher for this purpose, and it was regulated as a form in which the students could fill in the relevant fields. The form consists of two parts, and the second part includes questions about the foundation to be established by the students. These questions were also prepared in accordance with the argumentation process as in other activities.

Implementation Process

The application process of the research was carried out in Şehit Cem Özgül Secondary School in the central district of Adıyaman province in the 2013-2014 academic year. Certain preparations were made in order to carry out the process smoothly before the start of the application process. Within this framework, the application process of the research consists of three stages of the pre-practice preparations, introducing the application process and pilot application, implementation of the practice. The details of these stages are as follows.

Pre-Practice Preparations

The necessary permissions were taken before starting the application process of the research, and information about the application process was given to the school director and the teacher of 7/B class where the practice would be carried out. The necessary permissions were taken for the camera record that would take place throughout the application process in order to watch the practice and eliminate the problems.

Introduction of the Implementation Process and Pilot Practice

1. After the completion of the pre-preparations, the researcher first met the students in the application classroom and gave the students information about the application process.

2. Then, the argumentation process was introduced to the students for a lesson's hour, and they were given information about the components of argumentation. Presentations were made concerning which components an argument produced in this process should include and how these components (claim, data, grounds, supportive, confuting) should be formed. The preparation stage of the practice took one week (three lesson hours).

3. In the second week, the researcher carried out a pilot application both in order to prepare the students for the application process and the camera record to take place in the classroom throughout the process.

4. At this stage, exemplary scenarios that the students can discuss in accordance with the argumentation process and create dilemma among the students were explained and discussed as the whole class. In this process, the researcher wrote the claims, data, grounds, supportive and confuting included in the arguments produced by the students on the board, and evaluated the level of these arguments produced by the students in the classroom in terms of these components. Thus, the points that the students should be careful about in the arguments they will produce in the actual practice were emphasized, and it was aimed to create the readiness levels of the students before the application. This practice lasted for a week (three lesson hours).

Implementation of the Application

1. In the first week of the practice, the researcher made an application for teaching the subject of Life Coming from the Soil of "Economic and Social Life" unit of the seventh-grade social sciences lesson. The researcher explained the subject by using the presentations mainly prepared for the acquisition of the content in the curriculum. During lecturing, a discussion environment was created in the classroom by using questions that had been pre-prepared in accordance with the content and argumentation process, and the process was recorded by means of camera recording. After lecturing, the worksheet named as The Best for Adıyaman prepared for the activity of the first week was distributed to the students, and the students were asked to examine this worksheet. Care was taken that all students in the classroom actively participated in the discussion. After this discussion, the students were asked to individually fill in the worksheets distributed. This process took three lesson hours.

2. In the second week of the practice, the subject How Should I Choose My Occupation of the unit "Economic and Social Life" of the seventh-grade social sciences lesson was taught, and the activity prepared for this lesson was implemented. This subject was first taught by the researcher with the presentations suitable for the content just as in the previous practice. Then, the worksheet named as How Do We Choose Our Professions? designed for the second-week activity was distributed to the

students. The students were divided into small groups of 5-6 people, and they made small group discussions among themselves with regard to the questions in the worksheet. Throughout the practice, the lessons were taught in the social sciences classroom at school. This classroom was very suitable for small group discussions as the desks were not fixed and each desk was designed for one student. In small group discussions, the desks were arranged in small circles in such a way that group members could see one another, and a closer communication was ensured between the students. The groups also discussed with one another after the small group discussion. After the discussions, the students filled in the worksheets individually and handed them to the researcher. This process took three lesson hours.

3. The subject How Were They Educated of "Economic and Social Life" unit of the seventh-grade social sciences lesson was taught in the third week of the practice. Just as in other subjects, this subject was also taught with discussions suitable for the argumentation process. The data of this week were collected by using the worksheet Who is Right? Ayşe or Her Parents? that had been pre-prepared by the researcher in accordance with the subject. This worksheet was designed in the form of story completion as indicated above. After the worksheet had been distributed to the students, they were asked to read the story silently. Then, the questions on the story in the worksheet were asked to the students. The questions were organized in such a way that they required the students to use the argumentation components. After the question and answer part, the students were asked to complete the end of the story. The researcher told the students that they should use the argumentation components such as claim, data, grounds, supportive and confuting while completing the story. This lesson was finalized by reading some of the stories after the students had completed their stories. The activity of the third week also lasted for three lesson hours.

4. The subject of The Coming of the Industry and What It Brings in "Economic and Social Life" unit of the seventh-grade social sciences lesson was taught in the fourth week of the practice. Technological developments together with the industrial revolution, the effect of the industry on human life and especially its positive and negative aspects were emphasized while teaching this subject. The researcher designed the activity named as Fish Death on the Fish Farm for the subject that is taught in this flow. In this study, the students were divided into three groups by the researcher based on volunteering, and each group was given different roles. The students in the first group were given the role of the defence lawyer of the factory that was claimed to have led to fish death on the fish farm, the students in the second group were given the role of the prosecutor who claimed that the factory was responsible for the death, and the students in the third group were given the role of the judge who would make the final decision. A discussion was made in the classroom about the argumentation process before filling in the worksheets. Then, each group filled in their worksheets in accordance with their own roles.

5. The fifth week of the practice was also the last week when the activities were implemented. In this week, the lesson was taught in order to teach the subject Foundations of the unit "Economic and Social Life" of the seventh-grade social sciences lesson. In this week, the content of the subject was taught by the researcher in accordance with the argumentation process just as in the other weeks. Then the activity Let's Set Up a Foundation, too was implemented in accordance with the subject content. For this activity, the students were first asked to create groups of three and set up a foundation. The researcher designed a foundation establishment voucher in advance and distributed this to the students. The students in each group set up a foundation and filled in the foundation establishment voucher accordingly. The activity was turned into a worksheet by adding the questions created by students with regard to foundations at the second stage of the foundation voucher. After the students had filled in the foundation voucher, they collectively answered the questions at the second stage of the study. Then, they introduced the foundations they set up to the classroom and made discussions on them. The researchers and students made a general assessment on the whole of the application process after completing the last week of the practice in this way.

6. The application process of the practice consisted of three stages in total being the introduction of the argumentation, pilot practice (two weeks, six lesson hours) and the implementation of the practice, and lasted for eight weeks.

Data Analysis

Descriptive analysis was used to analyze the research data, which is analysis of the qualitative research approach. According to this approach, the data obtained summarized and interpreted according to the themes identified in the pre-study. It is often given in direct quotations in descriptive analysis approach. After the data obtained was described, it was interpreted and presented to readers (Yıldırım and Şimşek, 2008). In order to analyze the argument levels formed by students through the activities prepared for the research, the Toulmin Argumentation Model (TAM) used by Erduran et al. (2004) in their studies was used. This assessment scale is the developed form of the model used to determine the quality of argumentation in the Toulmin Argumentation Model. The Toulmin's argument model consists of a total of six items including three basic items of "claim, data and reasoning" and three auxiliary items of "modifier, supportive and corrosive" (Toulmin, 2003). However, this model has some limitations while assessing the quality of argumentation in terms of determining the level of the items. The difficulty of determining how rebuttal in arguments desired to be compared affected the argument is an example for this. To eliminate the problems experienced, Erduran et al. (2004) redesigned the argument assessment criteria in the Toulmin Argument Model in the form of an analytical scale.

In this assessment model, student arguments were classified as Level 1, Level 2, Level 3, Level 4 and Level 5 according to the argument components they contain. This analytical scale developed by Erduran et al. (2004) is shown in a more detailed way in Table 1 according to the argument components and levels they contain.

Table 1. Argumentation Assessment Scale *

Argumentation Level	Argumentation Content/Component
Level 1	Argument consists of simple claim or a simple claim with counter-claim.
Level 2	Argument can consist of a simple claim with another claim, data, reason or warrant but doesn't contain any rebuttal.
Level 3	There are data, reason and warrant and weak rebuttal with the claim and counter-claim.
Level 4	There should be a clear rebuttal with the claims series, data, reason and warrant.
Level 5	At this level, there should be more than one clear rebuttal in addition to all components found in other levels.

* Erduran, Simon, and Osborne (2004)

Each level in this scale was categorized by the researcher by elaborating in itself, and each category was converted to a standard argumentation assessment rubric by scoring as 1, 2 and 3. In this process, support was received from an evaluation and assessment specialist and three field experts. Thus, a more accurate assessment tool was developed to determine the quality of arguments formed by students. Argumentation assessment rubric developed by the researcher is shown in Table 2.

Table 2. Converted Form of Argumentation Assessment Scale Developed by Erduran et al. into Argumentation Assessment Rubric by the Researcher

Argumentation Level	Score	Argumentation Content (Criterion)
	1	No clear claim (Indirect claim)
Level 1	2	A simple claim
	3	A simple claim and counter-claim
	1	Claim + data
Level 2	2	Claim + data + reason
	3	Claim + data + reasons + warrant
	1	Claim + (data) + rebuttal (Weak, unclear)
Level 3	2	Claim + data + reason + rebuttal (Weak, unclear)
	3	Claim + data + reason + warrant + rebuttal (Weak, unclear)
	1	Claim + data + rebuttal (Clear, explicit, strong, one)
Level 4	2	Claim + data + reason + rebuttal (Clear, explicit, strong, one)
	3	Claim + data + reason + warrant + rebuttal (Clear, explicit, strong, one)
	1	Claim + data + rebuttal (more than one, clear)
Level 5	2	Claim + data + reason + rebuttal (more than one, clear)
	3	Claim + data + reason + warrant + rebuttal (more than one, clear)

The rubric developed by the researcher was arranged in a way that each level would be at the least 1 point and 3 points at the most to facilitate assessment. Thus, the rubric was converted into a form that students could get 5 points at the least and 15 points at the most.

In the first part of the data analysis, answer or phrases in the studying sheets filled out by students were computerized. When carrying out this, a code was given to students in each studying paper to determine the weekly progress of students, and data were organized in accordance with the student codes. For instance, lettering system in the form of A, B, C, D, E from the first week to the last week was used in studying sheets, and the same student was coded in the form of A1, B1, C1, D1 and E1 for each study. In addition, no manipulation or editing was made in student expressions, and expressions were used as so.

Findings

The first sub-problem question of the research was "At which level are the arguments formed by students in social studies course in which argumentation-based teaching is performed?". The findings that belongs to this problem situation is shown in Table 3.

Table 3. Results Related to Argument Levels Formed by Students nuçlar

	Level 1	Level 2	Level 3	Level 4	Level 5
1. Activity	0	13	9	8	0
2. Activity	0	5	12	12	0
3. Activity	0	5	2	9	11
4. Activity	0	1	3	13	10
5. Activity	0	1	1	18	12

When the table related to the first sub-problem was analyzed, it was determined that the simplest arguments consisting of a simple opinion or thesis appeared in all activities of the students and that they could not produce arguments at Level 1. This finding can be interpreted as that students had foreknowledge related to the activity contents.

When the arguments produced at Level 2 were analyzed, it was determined that students produced f=13 arguments in the 1st-week activity, f=5 arguments in the 2nd-week activity, f=5 arguments in the 3rd-week activity, f=1 argument in the 4th-week activity and f=1 argument in the last week activity. This finding obtained can be interpreted as that while students produced more simple arguments at the beginning of argumentation process; they began to produce higher quality arguments as the process progressed. When the arguments produced at Level 3 were analyzed, it was determined that students produced f=9 arguments in the 1st-week activity, f=12 arguments in the 2nd-week activity, f=2 arguments in the 3rd-week activity, f=3 arguments in the 4th-week activity and f=1 argument in the last week activity. This finding shows that students further used weak rebuttal that are the most important component of Level 3 in the first two studies. When the arguments produced at Level 4 were analyzed, it was determined that students produced f=8 arguments in the 1st-week activity, f=12 arguments in the 2nd-week activity, f=9 arguments in the 3rd-week activity, f=13 arguments in the 4th-week activity and f=18 arguments in the last week activity. In arguments produced at this level, there was no clear rebuttal along with the claim, data, reason and warrant, and argument quality was quite good. According to the findings obtained, it is seen that arguments at this level were produced in all five activities. However, the fact that more arguments were produced at this level in the last two studies could be interpreted as that students were positively affected by the process and that they produced higher quality arguments as the process progressed. When the arguments produced at Level 5 were analyzed, it was seen that students could not produce arguments at this level in the 1st and 2nd-week activities. It was determined that they produced f=11 arguments in the 3rd-week activity, f=10 arguments in the 4th-week activity and f=12 arguments in the last week activity.

This finding obtained can be interpreted as that students learned the argumentation process better in the last three activities and that they used more than one rebuttal in their studies and increased their argument quality. In conclusion, while students produced arguments at the lower levels and of poor quality at the beginning of the process in argumentation-based social studies teaching, they further used argument components (claim, data, reason, warrant, rebuttal) and produced a higher level and quality arguments as the process progressed. This finding shows that students were positively affected by the argumentation-based social studies teaching.

Furthermore, when the table was analyzed, it was determined that the total number of students participating in activities was different each week. Students' attendance at courses is the reason for this. Arguments formed by each student participating in the course were assessed on a weekly basis.

The second sub-problem question of the research was "At which level are the arguments formed by students in social studies course in which argumentation-based teaching is performed in terms of weekly activities?". Data of the research were obtained by five activities that were developed for this study. Each activity was organized as studying sheets and distributed to students. Discussions were made in accordance with the argumentation process in the class through these activities, and students were asked to produce arguments relating to these activities. The table and the sample argument level analyses concerning the findings obtained from this implementation are given below. An analysis of an argument sample is given at each level.

Level 2 Argument Sample

As previously mentioned, students produced the least arguments at Level 2. An argument produced at Level 2 should contain at least one claim and data, reason and supportive. Level 2 was classified in itself by the researcher for a clear understanding of the quality of an argument at this level. This classification is shown in Table 4.

Table 4. Argumentation Components at Level 2

1	Claim + date
2	Claim + data + reason
3	Claim + data + reason + supportive

A-16: I will sell the land to Ali Bey because ultimately he is an agricultural engineer and is more aware of this issue. It would be better for Ali Bey to grow cherry in Adıyaman. More revenue is obtained. Moreover, cherry can grow well because Adıyaman is not arid.

At this argument level, the A-16 student made a **claim** saying that he wanted to sell the land to Ali Bey. The student supported his claim by **data** emphasizing the profession of Ali Bey and finally presented a **reason** in the form of why cherry growing was important for Adıyaman. Finally, he also presented simple **data** related to the climate of Adiyaman. The analysis of the argument produced by the A-16 student is shown in Table 5.

Table 5. Analysis of the A-16 Student's Argument at Level 2

A-16	Claim + data + reason + claim + data

Level 3 Argument Sample

A third-level argument includes a weak rebuttal in addition to the components at Level 2. This level was divided into three categories by the researcher in itself for a clear understanding of the quality of an argument at this level. The classification of Level 3 is shown in Table 6.

Table 6. Argumentation Components at Level 3

1	Claim + (data) + rebuttal (Weak, unclear)
2	Claim + data + reason + rebuttal (Weak, unclear)
3	Claim + data + reason + warrant+ rebuttal (Weak, unclear)

B-29: The most important factors in the choice of profession are prestige and high income. Ali's uncle studied computer engineering and began working immediately. Professions such as doctorship and judgeship earn a lot and are more prestigious professions compared to other professional groups. Mert does not talk much but composes poetry well. His mother wants him to be a lawyer, but Mert does not want to be a lawyer as he does not like to talk too much. He wants to be an author.

At this level, the student made a **claim** by saying his opinion about the choice of profession and supported his claim by **data** giving an example of Ali's uncle. That he indicated that the professions of doctorship and judgeship earn a lot and are prestigious professions are other **data** supporting his claim. Mert used a **weak rebuttal** related to the fact that this factor was not effective in the choice of profession. The analysis of the argument produced by the B-29 student is shown in Table 7.

Table 7. Analysis of the B-29 Student's Argument at Level 3

B-29	Claim + data + data + rebuttal (Weak, unclear)

Level 4 Argument Sample

The most important component than the previous level is rebuttal in this level. A fourth-level argument must include claim, data, reason, warrant and a clear rebuttal. This level was divided into three categories by the researcher in itself for a clear understanding of the quality of an argument at this level. The classification of Level 4 is shown in Table 8.

Table 8. Argumentation Components at Level 4

1	Claim + (data) + rebuttal (Clear, explicit, strong, one)
2	Claim + data + reason + rebuttal (Clear, explicit, strong, one)
3	Claim + data + reason + warrant+ rebuttal (Clear, explicit, strong, one)

C-30: Ayşe was very much upset by this incident, but still she was determined to persuade her father. She did not start talking about the issue immediately as she was resentful towards her father, and after sitting for a short time, Ayşe said:

"Dad, I have decided, I will be a theater player, I'm going to prove this to you. I want to tell you about an incident. I have a friend; she is older than me. She also wanted to be a theater player in the past, but her family did not allow her as they wanted her to be a teacher. I met her by chance. She followed her family's advice and became a teacher. However, she was sorry for being a teacher. All students complained about her. Because she could not give the lesson, and eventually she was expelled from the profession. Please let me become a theater player if you don't want me to be like her. If I fail to become a theater player and take part, I will give up this decision."

Her father: "Of course, I don't want you to experience such an incident in the future as you described. Therefore, I acknowledge you to be right."

Ayşe: "I love you, daddy."

At this level, student's decision to become a theater player is also her **claim**. She used the incident related to her friend that she told her father about as **data** and presented her unwillingness to be like her friend in the example as the **reason**. Finally, she tried to impose the claim of the story's hero to her father by using **a clear rebuttal** related to the fact that she would give up if she could not take part in shows. The analysis of the argument produced by the C-30 student is shown in Table 9.

Table 9. Analysis of the C-30 Student's Argument at Level 4

C-30	Claim + data + reason + rebuttal (one, clear)

Level 5 Argument Sample

An argument which is had in Level 5 should consist of claim, data, reason, warrant and more than one clear rebuttal. The classification of Level 5 is shown in Table 10.

Table 10. Argumentation Components at Level 4

1	Claim + (data) + rebuttal (Clear and more than one)
2	Claim + data + reason + rebuttal (Clear and more than one)
3	Claim + data + reason + warrant+ rebuttal (Clear and more than one)

D-17 (Prosecutor): The factory should be closed. There are about 1.5 million fish losses. People will become unemployed when the factory is closed, but if it is not closed, the life of creatures will be at risk. Not only animals but also people can be damaged. We see similar cases on television, and those factories are closed. There are 50 houses in the village where fish died, and the population of the village is 160. Scarcity can be experienced in the village as people in this village make a living by fishing. However, my claim may change if food produced in this factory cannot be produced in another factory and its bringing from other provinces is also a problem.

Assuming the role of a prosecutor, this student explained his **claim** by stating his own opinion for the closure of the factory. While he presented the fact that the life of creatures would be at risk as the **reason**, he strengthened his claim by using numerical **data** related to the village where fish waste was experienced. Finally, he presented more than one **rebuttal** through which his claim would not be valid concerning the states of the production of food produced in that factory in another place or bringing it from other places. The analysis of the argument produced by the D-17 student is shown in Table 11.

Table 11. Analysis of the D-17 Student's Argument at Level 5

D-17	Claim + reason + supportive + data + corrosive (more than one, clear)

The third sub-problem question of the research was "How do the argument levels formed by students in social studies course in which argumentation-based teaching is performed vary in terms of the subjects?". Findings related to this sub-problem are shown in Table 12.

Table 12. Distribution Results of Student Argument Levels By Subjects

	1st SUBJECT SOIL	2nd SUBJECT CHOICE OF PROFESSION	3rd SUBJECT CHOICE OF PROFESSION	4th SUBJECT INDUSTRY	5th SUBJECT FOUNDATION
LEVEL 1	0	0	0	0	0
LEVEL 2	13	5	5	1	1
LEVEL 3	9	12	2	3	1
LEVEL 4	8	12	9	13	18
LEVEL 5	0	0	11	10	12

When the table related to the third sub-problem was analyzed, it was determined that students produced more arguments at Level 2 that included more simple arguments for the subject of "Soil" which was the subject of the first-week activity and that the number of students producing argument was less at Level 3 and Level 4 that included weak and clear rebuttal. Although students produced fewer arguments at Level 2 related to the subject of "Professional Training," they produced more arguments at Level 3 and Level 4 that included rebuttal. It was seen that arguments were firstly produced at Level 5 related to the subject of "Choice of Profession," besides, they were high in number. While there was a decrease in the number of arguments produced at Level 3 that included weak rebuttal in this regard, it was determined that more arguments were produced at Level 4 and Level 5 that included clearer rebuttal. While arguments produced at Level 2 and Level 3 about "Industry" decreased, arguments at Level 4 and Level 5 were found to show a significant increase. In the last subject of "Foundations", it was determined that a vast majority of students produced maximum arguments at Level 4 and Level 5 that included quality arguments. Consequently, argument levels produced by students on different subjects in the seventh-grade social studies course in which argumentation-based teaching was performed varied numerically.

Furthermore, it was found out that the content structure of the activities within the process affected the student arguments as a result of the in-depth analysis carried out related to students' arguments. It was determined that students gave examples from their own lives in their arguments in the activities related to the choice of profession, and they touched on social problems and current issues in other activities.

Conclusion, Discussion and Suggestions

In the first sub-problem of the research, an attempt to determine the argument levels formed by students in social studies course in which argumentation-based teaching was performed was made in order to achieve the purpose of the research. As a result of the study, students' argument levels showed a positive increase from the first activity to the last activity, and it was found that students' argument levels improved. Considering the studies indicating that argumentation is a method and also a skill (Kolsto, 2001; Mirza & Perret-Clermont, 2009; Crowell & Kuhn, 2012), this finding also revealed the conclusion that students' argumentation skills developed in the seventh-grade social studies course in which argumentation based teaching was performed.

In the study carried out to analyze the eighth-grade students' development of skills of creating oral arguments by using the Toulmin Argument Model, Untereiner (2013) stated that there was an increase in the number of arguments formed by students at the end of the implementation process, they produced arguments including more components towards the end of the implementation process and the courses conducted using argumentation process supported the argumentation skills of students. Reznitskaya et al. (2001) revealed the conclusion that class discussions carried out in accordance with the argumentation process improved the argument levels produced by students and the argumentation skills of students. Erduran et al. (2004) revealed the conclusion that there was an increase in the quality of argument levels formed by students in the courses conducted with argumentation method. In the study carried out by Nussbaum and Edwards (2011), it was determined that argument quality improved as a result of the in-depth analysis of the argument formed by a student. Zohar and Nemet (2002), concluded in their study carried out with experimental and control groups that students in the experimental group in which argumentation method was used produced better quality arguments.

In the second sub-problem of the research, an attempt to determine the argument levels formed by students in the seventh-grade social studies course in which argumentation-based teaching was performed according to the weekly activities was made. Analyses of the arguments formed by students were included in this sub-problem, and the study was detailed.

As a result of their study carried out with experimental and control groups, Kuhn and Moore (2015) concluded that when the written and oral arguments of students in the experimental group were analyzed, they used more evidence / data to strengthen their claim and developed their argument quality. Wissinger (2012) carried out the study investigating the effect of argumentative discussions in social studies course on written arguments formed by students with experimental and control groups. In the study that continued for a total of three weeks, it was determined that the argument levels of students in the experimental group in which discussions were performed in accordance with the process of argumentation increased after the discussions made each week, that students produced better quality arguments, and that a significant difference was found between the control group students. As a result of the study aiming to develop the argumentation skills of students, Crowell and Kuhn (2012) found that there was a significant improvement in the argumentation skills of students, who had the lowest argumentation skill at the beginning of the process, at the end of the implementation. Çetin, Kutluca, and Kaya (2013) carried out a total of five-week study with ninth-grade students to determine the students' argumentation quality. In the study, data were collected by scenarios designed in accordance with the process of argumentation, and the arguments formed by students concerning these scenarios were assessed at the beginning and end of the process. As a result of the findings obtained, it was determined that there was an increase in the quality of arguments formed by students from beginning of the process to the end of the process. When the study results in the literature supporting this sub-problem were analyzed, in general, it was determined that there was a gradual increase in the argument levels formed by students in courses conducted based on argumentation within the process, that implementation time improved the quality of students' arguments, and that quality argument producing behavior could be given to students as a result of long-term studies conducted.

In the third sub-problem of the research, argument levels formed by students in social studies course in which argumentation-based teaching was performed were analyzed according to the subjects. It was found that the content structure of the activities within the process affected the student arguments as a result of the in-depth analysis of the arguments formed by students in the implementation process of activities prepared within the specified subjects. For instance, when the third-week activity was analyzed, it was seen that the activity was designed in the form of story completion, and that effort of a student trying to impose her own choice of profession to her family was discussed as the content. It was determined that students in this activity produced more arguments at Level 5 that included the highest quality arguments compared to other levels. When the students' in-class discussions and student arguments related to this activity were analyzed, it was determined that students identified themselves with the hero of the story in terms of age and position, and they included the reactions that they could reveal in possible similar situations in the arguments they produced. When the fifth-week activity in which the subject of foundation was taught and students were asked to establish an imaginary foundation was analyzed, it was determined that a group of students established "Protection of Martyrs' Children Foundation" and the purpose of the foundation was to provide moral and material support to the children of miners who became martyr in Soma. Also, it was determined that students were affected by the mine disaster in Soma which was just experienced during the implementation process of the research and that they included this subject in the arguments they formed. In the same activity, it was determined that students mostly preferred to establish the foundations for solving a problem such as "Searching Lost Children Foundation, Hosting the Street Animals Foundation, Bedridden Patient Assistance Foundation, and Turkey Foundation for Fight Against Diseases", and that they included these issues in the arguments they formed. It can be inferred from these results that students produced better quality arguments on subjects they were interested and tried to solve the problem using the argumentation process when they were faced with real-life problems.

In the studies carried out in the literature concerning the results determined under this sub-problem, it was determined that, in courses in which argumentation-based teaching was performed, students further participated in the process of argumentation when they were faced with real-life problems, produced better quality arguments and their argument level improved. In the study carried out to determine the teacher candidates' opinions on 1998 and 2005 social studies program, Kaymakcı (2015) stated that teacher candidates indicated that social studies program included current issues was an advantage. When this result revealed by Kaymakcı (2015) is assessed within the third sub-problem of the study, it can be interpreted as that students can produce arguments more easily in social studies courses that often include current issues.

In their study in which they analyzed the students' decision-making states in the arguments they produced when they were faced with real-life problems, Patronis et al. (1999) revealed the conclusion that students succeeded in producing arguments and the quality of their arguments increased when they were exposed to a problem they may face in their own lives. Simon and Richardson (2009) examined the effect of argumentation environments that were organized by contents in accordance with the process of argumentation and supported by materials appropriate for this on the argument levels of students. As a result of the studies conducted using the literature review method, it was indicated that argumentation activities designed by leaning on the contents including small group discussions that students could perform according to their level that would draw attention instead of traditional teaching methods encouraged students to participate in the process of argumentation, and that students produced higher quality arguments in these environments.

Based on the results of this study carried out to determine the argument levels formed by students in the seventh-grade social studies course in which argumentation-based teaching was performed, the following suggestions were made.

1. Research results revealed that argument levels of students developed in social studies course in which argumentation-based teaching was performed, and that students produced higher quality arguments. However, in our country, when the social studies education literature was reviewed, it was found out that there was no study concerning the effect of this method on its use, academic success, attitude or skills teaching. Researchers are recommended to carry out studies that will increase the use of this method, which is widely used in the fields of science and provides important contributions to education, in the field of social studies.
2. This study carried out and similar studies (Patronis et al., 1999; Nussbaum, 2002; Simon & Richardson, 2009) revealed that the use of real life problems that would attract students' interests in the argumentation process further motivated students to be included in the argumentation process and that students formed higher quality arguments on these subjects. In this regard, it is recommended to give more place to real-life problems and current issues that will attract the students' interest in social studies curriculum to be prepared in order to increase the use of argumentation method and to ensure the active participation of students in the process.
3. Research results revealed that argument levels of students developed in social studies course in which argumentation-based teaching was performed, and that students produced higher quality arguments. However, in our country, when the social studies education literature was reviewed, it was found out that there was no study concerning the effect of this method on its use, academic success, attitude or skills teaching. Researchers are recommended to carry out studies that will increase the use of this method, which is widely used in the fields of science and provides important contributions to education, in the field of social studies.

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