

EFFECTS OF SYSTEMATIC LEARNING ON THE ACHIEVEMENTS OF STUDENTS IN SOCIAL STUDIES COURSE

E.Seda Koç

Kastamonu University,
Faculty of Education,
Department of Educational Science

Aliye Erdem

Ankara University,
Faculty of Educational Sciences,
Department of Elementary Education

Abstract

Systematic learning is a synthesis; where how all education strategies, methods and techniques will be used at the classes and are structured and presented. The purpose of the study was to determine the effectiveness of systematic learning in the 5th grade class social studies course. The study was conducted in the 2015-2016 educational year at an elementary school in Ankara according to the one group pretest-posttest design. An achievement test including 20 multi-choices questions and one open-ended question was used as a data collection tool in the study. The construct validity and factor analyzes were made, the parameter of Cronbach's alpha reliability was found as 0.83 and the data obtained from the study were analyzed for using t-test statistical technique. According to the findings of the study, it was found out that according to the systematic learning there is statistically significant difference in the scores of the experimental group at the level of knowledge, comprehension and total achievement. However, there was no significant difference at the level of application achievement mean scores.

Key Words: Systematic Learning, Social Studies, Achievement

Introduction

The rapidly changing world is in need of the individuals who comprehend the innovations and developments in education, are aware of their duties and fulfill these duties consciously. Survival of the human being depends on struggling and adapting himself continuously. What nutrition and reproduction are to physiological life, education is to social life (Dewey, 1996).

The individual should center his changing characteristics in order to enable the functionality of education having critical importance in the embodiment of the societies to sustain. The individuals who have begun to need new skills and personal qualifications in the 21st century cause the traditionalistic theories and perspectives to become different. Accordingly, it is observed that the learning approaches under the influence of the behavioral perspectives are relinquished gradually and instead, the approaches supporting the perception of humane learning started to become prevalent rapidly. Although all of the relevant approaches aim at including the terminal features adopted by the perception of modern education in the learning processes, systematic education differs due to having an enriched content which contains the features of multiple approaches.

Systematic education is a learning model created on the basis of likelihood philosophy by Sönmez. This philosophy acknowledges that the activities for learning & teaching should be arranged according to the situation, condition and students. Besides, it asserts that the evaluation activities can be discussed under the same rationale either in a multidimensional or unidimensional way. Moreover, it is stated that it is impossible to have a single learning & teaching strategy, theory, method, technique and tactic for now, so the person who will learn any behavior does not use a definite learning & teaching strategy, theory, method, technique and tactic constantly (Sönmez, 2010). As is seen, the likelihood philosophy has a perspective which believes that everything is variable in teaching processes and suggests that a standard structure for the activities to be held according to the individual and conditions is not possible. Therefore it is proper to say that systematic education is a systematic structure showing how to reflect the relevant perspective on the teaching processes.

An essential principle of the systematic education is that the student finds, uses and recreates the knowledge, skill, feeling and intuition by using different reasoning ways. In this approach, the student explores the knowledge, gives the meaning to it and uses and recreates it. This is the basis of the approach. The teacher can only be an advisor. The student can be generally included in any learning & teaching activity. In general, the teacher should pave the way for the student to explore, understand, use, regenerate and recreate the knowledge and offer opportunities in this context (Sönmez, 2010).

Other basic principles of the perception of systematic education are listed as follows;

1. No theory can singly explain the learning and teaching completely.
2. Every behavior, namely cognitive, affective, kinesthetic and intuitional features cannot be taught using a single theory, method and technique.
3. Everybody cannot learn the same behavior with the same strategy, theory, method, technique and tactic. Any person can apply different ways to learn and teach the same behavior, because the human being is a creature who differs from each other, resembles in several respects and is multidimensional as well.
4. The person cannot learn with a single activity. The behaviors can become permanent when numerous activities are used.
5. As the level and feature of the behavior change, different strategies, theories, methods, techniques, tactics and reasoning ways should be applied.
6. Instead of the lesson, the unit can be used as the base during teaching. Targeted behaviors of the lessons such as Math, Turkish, Painting, Music, Physical Education, etc. can be provided within the frame of this unit.
7. The education can enable the student to become skillful at exploring, understanding, using, regenerating and recreating the knowledge (Sönmez, 2010).

Systematic education is an approach that shows, structures and presents how to use all theories, strategies, methods and techniques. The common principles of all learning strategies, theories, methods, techniques and tactics should be considered when this approach which was created using the full learning strategy and the practices of Village Institutes is used.

Since the systematic education has a multiple learning perspective, it is used effectively in many lessons. Additionally, social studies are the leading lesson that can use this model when its content and structure are taken into account. Social studies is a field of study which discusses the interaction of the human with his physical and social environment within time dimension under an interdisciplinary approach by using the content and methods of the social sciences and other human-related sciences, and targets bringing up thinking, skilled and democratic citizens who have basic democratic values about life in a globalizing world (Doğanay, 2002). This lesson uses the combination of the knowledge and methods acquired from the social and human sciences for the purpose of bringing up effective citizens who can give decisions and solve problems based on the knowledge under the circumstances of the country and the world changing in almost all respects (Öztürk, 2009). As is seen, social sciences have a structure requiring multidimensional thought and the use of different methods which are adopted by the perception of systematic education.

In Social Sciences education, the objective is to bring up a productive and participatory individual who has democratic attitudes and values and became skillful at problem solving and decision making. The lesson of Social Sciences aims at contributing to the socialization of the child and providing several skills that will help him to solve the problems of daily life. On that side, its goal is to determine the problems faced/to be faced by the child and offer solution by perceiving the school and child as a real community and the part of this community, respectively. Moreover, the lesson of Social Sciences helps the child to recognize his immediate environment, strengthen his love of country, improve his sense organs and develop his ability to understand and search the causes of the events (Meydan, 2011).

After 2005, the education perceptions that will enable "knowledge generating" individuals to be brought up were started to be adopted considering all of the features mentioned in the curriculum developed for the lesson of Social Sciences. By means of the program, it was aimed at including a new understanding which is student-centered (activity-centered), balances the knowledge and skill with regard to social sciences and allows the student & environment interaction by taking his life and personal differences into account in learning and teaching processes. Accordingly, the efforts were for developing the current curriculum of the lesson to meet the following features.

- ✓ Every student is regarded as a distinctive individual.
- ✓ Awareness is shown to develop the expected qualifications of the students by enlightening their future lives.
- ✓ Particular importance is given to learning and realization of learning through enabling the development of the knowledge, concepts, values and skills.
- ✓ It encourages the students to think, ask questions and compare notes.
- ✓ It aims at bringing up happy and emotionally and physically healthy individuals.
- ✓ It places emphasis on adopting the universal values centering the national identity.
- ✓ Its objective is to develop the students mentally, morally, socially and culturally within the frame of their manners and customs.
- ✓ It places emphasis on bringing up the individuals who know and use their rights and fulfill their responsibilities.
- ✓ It enables the students to be aware towards the social problems.

- ✓ It allows the students to use their experiences in the learning process and interact with the environment.
- ✓ The variety of the learning & teaching methods and techniques were considered to reach all students.
- ✓ It enables the evaluation to be made within the processes of learning and teaching by periodically examining the study files of the students (MEB, 2009).

As is seen, the perception which was adopted for the lesson of social sciences and curriculum development processes by the Ministry of National Education quite resembles the systematic education model. In both, there is a common perspective which believes that the personal differences should be reflected on the methods/techniques and other applications used in the learning & teaching processes in consideration of these differences, targets bringing up the individuals who learn during life and apply the acquired knowledge and skills to life and argues that the activities which make the students effective in classroom environment and can be useful in increasing the participation level in the classroom should be held. Furthermore, another common perspective remarks that the evaluation processes should not only reveal what the students can do with quantitative data, but also be made for determining the distance covered by them in the learning processes.

The purpose of this study is to determine the effects of the learning & teaching process set according to systematic education model on the success of the students under the theme of "One Country One Flag" taught in the lesson of Social Sciences in the fifth grade. In the study, the answers of the following questions were sought in line with this general purpose:

1. Is there a significant difference in the knowledge (remembering) level of the Social Sciences lesson in the fifth grade who was subjected to systematic education model between the scores of the pretest and post test?
2. Is there a significant difference in the knowledge (understanding) level of the Social Sciences lesson in the fifth grade who was subjected to systematic education model between the scores of the pretest and post test?
3. Is there a significant difference in the application level of the Social Sciences lesson in the fifth grade who was subjected to systematic education model between the scores of the pretest and post test?
4. Is there a significant difference in the level of the Social Sciences lesson in the fifth grade who was subjected to systematic education model between the overall scores of the pretest and post test?

Method

Model of the Research

In this study conducted to determine the effectiveness of the systematic education on the social sciences lesson, "The experimental design of the single group pretest-post test without control group" was used. In single group pretest-post test model, an independent variable is applied on the group chosen randomly. Single group pretest-post test model has the measurements of both pretest and post test (Karasar, 2014). Determining the effectiveness of the variable tested for this model (the effect of the independent variable on the dependent variable) is possible by testing the difference in the means of the pretest and post test. "t" test is used for the related groups, because there are one group and two measurements for this group. If the distribution is not normal or the sampling is small, Wilcoxon signed ranks test which is a nonparametric method is used (Karasar, 2014). Symbolic view of the design is as follows;

Group	Pretest	Procedure	Post test
G	O1	X	O2

G, O1, X and O2 refer to the processed group, premeasurement from the experimental group, experimental process and the last measurement from the experimental group, respectively (Büyüköztürk et.al., 2008).

Study Group

Population and sampling determination were not made in the research. Instead, the study group was used. Study group of the research consists of 21 students in the fifth grade of a formal secondary school in Ankara province Altındağ county.

Data Collection Tool

Achievement test for the lesson of social sciences which was prepared as the data collection tool by the researcher was used as the pretest and posttest. The test comprising 26 questions initially was applied to 96 fifth grade students to determine the reliability of the test and the results were evaluated statistically. Accordingly, 6 items were excluded from the test providing that the current gains were represented and content validity of the test would not be deteriorated. KR-20 reliability coefficient of the last test consisting of 20 items was found to be 0.83.

Data Collection and Analysis Process

The steps of the process followed during the research in which the systematic education model was applied are as follows;

- ✓ The theme to be taught according to systematic education model was determined. The activities were prepared in parallel with the gains that the students are expected to have under the theme.
- ✓ Pretest was given to the students to determine their readiness levels related to such gains.
- ✓ A picture set about the concepts and principals aimed to be taught was prepared. The students were requested to write nine sentences about the picture set, find a new title for the picture, write seven principals about the picture and write five concepts that they wanted to learn from this picture set and the meanings of these concepts, respectively. The teacher targeted having the students comprehend the concepts by sampling them and the students found the principals based on these samples.
- ✓ A case study about the subject was given to the students. It was planned for the students to comprehend the knowledge learned through interiorizing the situation and the characters in the case.
- ✓ A short film named "November 10" was shown to the students. Afterwards, they were requested to sort the activities which Atatürk performed for the Turkish Nation during his life chronologically.
- ✓ The students read the poem named "Last Letter of Atatürk" and they were requested to write a text as an answer to him and express Atatürk in their dreams in writing.
- ✓ After a puzzle study containing the concepts learned in the lesson, the students listened to a folk song named "Vardar Plain", one of the favorite songs of Atatürk and the lesson was finished.
- ✓ The final test was applied at the end of the process.

Data obtained from the research were analyzed with "t test for dependent groups" (paired sample test). The goal of using t-test for the dependent groups is to determine the presence of a statistically significant difference by comparing the mean scores of the pretest and last test of the students in the study group. SPSS 20 and Microsoft Excel package programs were used for data analysis. Significance level was accepted as .05 during data interpretation.

Findings

This part contains the findings and comments about the statistical analysis of the data obtained from the research. Firstly, it is evaluated if there is a significant difference between the pretest and post test scores about the knowledge (recall) level of the group subjected to systematic education model in the 5th-grade social studies. The results of the knowledge (recall) level in the achievement test are shown in Table 1.

Table 1. Difference between the pretest and post test scores about the knowledge (recall) level of the experimental group

	N	Number of Questions	Pretest \bar{X}	Post Test \bar{X}	Difference \bar{X}	Ss	t	p
Experimental Group	21	6	4.14	5.71	1.57	0.62	6.28	0.00*

If $T > 2.365$, the program is significant.

It is seen in Table 1 that mean pretest and post test scores of the experimental group about the knowledge level in social studies are 4.14 and 5.71, respectively. T test was used to test if there was a significant difference between the mean scores of the group about the knowledge level.

Since t value (6.28) was greater than 2.365, it was concluded that the difference was significant. Therefore it can be suggested that the practices performed according to systematic education model are effective on the gains of knowledge level in social studies.

The second sub-problem of the research is as follows: "Is there a significant difference between the pretest and post test scores about the comprehension (understanding) level of the group subjected to systematic education model in the 5th-grade social studies?" The mean scores of the students about their comprehension level in the achievement test are shown in Table 2.

Table 2. Difference between the pretest and post test scores about the comprehension (understanding) level of the experimental group

	N	Number of Questions	Pretest \bar{X}	Post Test \bar{X}	Difference \bar{X}	Ss	t	p
Experimental Group	21	6	1.42	2.14	0.71	0.57	3.22	0.00*

If $T > 2.365$, the program is significant.

As is seen in Table 2, mean pretest and post test scores of the experimental group about the comprehension level in the achievement test are 1.42 and 2.14, respectively. Observed t value is 3.22 Since t value was greater than 2.365 and its degree of freedom and significance level were 20 and 0.05, respectively, the difference was determined to be significant. In line with these findings, it can be stated that systematic education model is effective on providing the behaviors at comprehension level.

Moreover, the answer of the following question is searched in the study: "If there is a significant difference between the pretest and post test scores about the application level of the group subjected to systematic education model." Mean scores about the application level of the students in the experimental group are given in Table 3.

Table 3. Difference between the pretest and post test scores about the application level of the experimental group

If $T > 2.365$, the program is significant.

	N	Number of Questions	Pretest \bar{X}	Post Test \bar{X}	Difference \bar{X}	Ss	t	p
Experimental Group	21	8	4.71	6.71	2	2.83	1.74	0.00*

In Table 3, mean pretest score of the students in the experimental group about the application level is 4.71 whereas the mean post test score is 6.71. After analyzing t test conducted to see if the difference between the scores of the students is significant, any statistically significant difference was not observed, since t value (1.74) was greater than 2.365 and its degree of freedom and significance level were 20 and 0.05, respectively. For this reason, it was detected that the applications performed according to systematic education model are effective on providing the behaviors at application level. Lastly, the research aimed to determine if there is a significant difference between the total pretest and post test scores of the students, as a result of the applications performed in the experimental group. Total scores of the students obtained from the achievement test are indicated in Table 4.

Table 4. Difference between the total pretest and post test scores of the experimental group

	N	Number of Questions	Pretest \bar{X}	Post Test \bar{X}	Difference \bar{X}	Ss	t	p
Experimental Group	21	20	10.28	14.57	4.14	1.81	5.59	0.00*

If $T > 2.365$, the program is significant.

As is seen in Table 4, mean pretest and post test scores of the students in the experimental group obtained from the achievement test are 10.28 and 14.57, respectively. T test was applied to see if there is a significant difference between both means. According to results of the analysis, t value (5.59) was greater than 2.365 and its degree of freedom and significance level were 20 and 0.05, respectively, so it was concluded that the significant difference between the data of the achievement tests applied to experimental group before and after the systematic education model was in favor of the last test. It can be stated in accordance with these findings that the systematic education model applied in social sciences is effective on increasing the academic achievements of the students.

Result, Discussion And Suggestions

Systematic education is a learning model which accepts that learning & teaching processes cannot be planned based on a single strategy, method or technique, since the individuals and conditions may vary. The model argues that teaching processes should be based on multiple understanding and believes that enhanced experiences should be used to enable the students to adopt the targeted behaviors. This study aimed at determining the effect of the systematic education on the difference between the pretest and post test scores of the students at knowledge, comprehension, application and total levels in the 5th-grade social studies.

According to the findings obtained after the applications performed in the experimental group, there is a significant difference between the pretest and post test scores of the students at knowledge and comprehension levels. When the results of the study conducted by Eldemir (2012) are analyzed, it is seen that systematic education has similar effect on the difference between the pretest and post test scores of the students at knowledge and comprehension levels in Traditional Turkish Classical Music lesson. Furthermore, the findings of a study which was performed by Öntaş (2010) to determine the effect of systematic education on the difference between the pretest and post test scores of the 6th-grade students support this result. Kapıcıoğlu (2006) obtained similar results in his study within the scope of the 3rd-grade Life Science lesson and concluded that the model is effective on the difference between the pretest and post test scores at knowledge and comprehension levels.

It was observed in the study that there is not a significant difference between the pretest and post test scores of the students at application level. Similarly, a study of Sezginsoy and Akkoyunlu (2011) conducted to determine the effectiveness of the systematic education in 4th social sciences on creating historical consciousness showed that the model has no significant effect on the difference between pretest and post test scores of the students at application level. Moreover, a study of Kütükoğlu (2007) detected that systematic education is effective on the difference between pretest and post test scores of the students at knowledge and comprehension levels in "Introduction to Teaching Profession" lesson whereas it does not affect the relevant difference at the application level. Behaviors at the application level are associated with the use of the previously-learned theoretical expressions and generalizations (facts, concepts, principles, rules, theories, etc.) in new cases. At this level, the student should use the relevant principles and generalizations while solving the problem (Şahin, 2014). Considering that the model is effective on the difference between pretest and post test scores at knowledge and comprehension levels which are the sub-steps of the model, researchers think that arranging learning & teaching experiences to enable the students to further use the concepts of the lesson shall contribute to elimination of the gap at the application level. Another suggestion is that except new activities, reviewing and arranging the questions of the achievement test regarding the application level can raise the efficiency of the learning & teaching process.

Lastly, the study aimed to determine the effect of the systematic education model on the difference between the total pretest and post test scores of the students. When pretest and post test scores obtained from the achievement test were compared, it was seen that there is a significant difference and the model is effective on raising the academic achievements of the students in the 5th-grade social sciences. The results received from the research of Duman (2009) titled "Effect of the Systematic Education on Reflective Thinking and Democratic Attitudes of the Teacher Candidates" are similar to results of our study. Takkaç (2007) and Pas (2004) concluded in their studies with different samplings that systematic education model affects the difference between the pretest and post test scores of the students positively in the 5th-grade social sciences. The results of both studies support the results of our study. The model contains most of the features required in the learning & teaching processes. This is the most important factor in the success of the applications performed in the experimental group. The essential points to be considered to ensure learning are as follows: considering the individual differences of the student as well as his/her comprehension ability during teaching process, knowing that the more sense organs of the student are affected by learning experiences, the more effective learning shall be and active learning shall be ensured if the student takes place in the leaning & teaching experience effectively (Akt. Varış et.al.). When all such points are compared to the principles of the systematic education, it is remarkable that the model is similar with the above-mentioned statements to a large extent. Thus, it can be specified that systematic education was developed considering the teaching principles, especially relativism to individual, familiarity with life, learning by doing and experiencing and openness as well as the principles in the learning psychology.

When the results of the research are evaluated completely, it can be concluded that systematic education is a proper and effective tool to ensure learning within the scope of the social sciences. Besides, it is seen that the other studies in literature aim to determine the effectiveness of the model within different lessons at different grades. Therefore it is thought that not only social sciences, but also other lessons can benefit from the model in an effective way.

When the syllabuses developed as of 2004 by the Ministry of National Education are examined, it is observed that the approaches and models which commonly advocate the student-centered education are underlined. It is noteworthy that only two model names are frequently mentioned to reflect the constructivist approach and multiple intelligence theory on the teaching processes of the relevant understanding, but systematic education model having a similar perspective has not been adopted in the programs, yet. For this reason, it is thought that if the results of the

numerous studies regarding the systematic education model should be considered by the educators, particularly program development experts and teachers, and the model should be reflected on the syllabuses and generalized at schools, the application of the student-centered education shall be contributed.

Biographies of Authors

E.Seda KOÇ, Assistant Professor of Educational Sciences at Kastamonu University. Graduated from Hacettepe University, Faculty of Education in 2005 and from Hacettepe University Institute of Educational Sciences in 2007. She got Ph D degree in Educational Sciences in 2012. Her study areas are curriculum development and evaluation, teacher training, comparative education, active learning method/techniques. She is married and has a son.

Aliye ERDEM, Assistant Professor of Educational Sciences at Ankara University. She has completed her undergraduate education at Hacettepe University, Faculty of Education, Department of Primary Education in 2004. She had her MSc degree in 2007 and PhD degree in 2012 at Hacettepe University Graduate School for Social Sciences, Department of Primary Education. She had worked as a primary school teacher and has been working in Ankara University Faculty of Educational Sciences since 2006. She is studying about primary education, teacher training, language teaching, literacy education, curriculum development, teaching and learning process.

References

- Büyüköztürk, Ş. diğerleri (2008). *Sosyal bilimler için veri analizi el kitabı*. Ankara: PegemA Yayıncılık
- Dewey, J. (1916). *Demokrasi ve eğitim*. (Çev. M. Salih Olararı). İstanbul: Başarı Yayıncılık.
- Doğanay, A. (2002). *Hayat bilgisi ve sosyal bilgiler öğretimi*. C. Öztürk; D. Dilek (Ed.), *Sosyal bilgiler öğretimi*. Ankara: Pegem A Yayıncılık.
- Duman, B. (2009). Dizgeli öğretimin öğretmen adaylarının yansıtıcı düşünme ve demokratik tutumlarına etkisi. Yayınlanmamış Yüksek Lisans Tezi, Fırat Üniversitesi, Sosyal Bilimler Enstitüsü, Elazığ.
- Eldemir, A. C. (2012). Geleneksel Türk sanat müziği dersinde uygulanan dizgeli öğretim yönteminin öğrenci erişimine ve kalıcılığa etkisi. *Mustafa Kemal Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 9(17).
- Karasar, N. (2014). *Bilimsel araştırma yöntemi*. Ankara: Nobel Yayın Dağıtım.
- Küçükkoçlu, A. (2007). Dizgeli öğretimin öğrenci erişimine etkisi. Yayınlanmamış Doktora Tezi, Sosyal Bilimler Enstitüsü, Atatürk Üniversitesi, Erzurum.
- MEB. (2009). *Sosyal bilgiler dersi (4-5. Sınıflar Öğretim Programı)*. Ankara: Devlet Kitapları Müdürlüğü.
- Meydan, 2011. *Sosyal bilgilerin temelleri*. (Editör Refik Turan & Kadir Ulusoy). Pegem Akademi, 2011.
- Öntaş, T. (2014). İlköğretim sosyal bilgiler dersinde yapılandırmacı yaklaşım ile dizgeli eğitimin öğrenci erişimine etkisi arasındaki fark. *Anadolu Eğitim Liderliği ve Öğretim Dergisi*, 2 (2), 43-51.
- Öztürk, C. *Sosyal bilgiler öğretimi: demokratik vatandaşlık eğitimi*. Pegem Akademi, 2009.
- Paş, A. K. (2004). İlköğretim beşinci sınıf sosyal bilgiler dersi cumhuriyete nasıl kavuştuk ünitesinin öğretiminin programlandırılmış öğretime göre değerlendirilmesi. Yayınlanmamış Yüksek Lisans Tezi. Abant İzzet Baysal Üniversitesi. Bolu.
- Sezginsoy, B. & Akkoyunlu, B. (2011). Sosyal bilgiler dersinde tarih bilinci oluşturmada dizgeli öğretimin etkililiği. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi*, 41, 411-422.
- Sönmez, V. (2010). *Eğitim felsefesi*. Ankara: Anı Yayıncılık.
- Sönmez, V. (2010). *Dizgeli eğitim*. Ankara: Anı Yayıncılık.
- Sönmez, V. (2010). *Program Geliştirmede Öğretmen El Kitabı*. Ankara: Anı Yayıncılık.
- Şahin, Ç. (2014). *Öğretim ilke ve yöntemleri*. (Editör Mehmet Aslan). Ankara: Anı Yayıncılık.
- Takkaç, A. (2007). Dizgeli eğitimin sosyal bilgiler dersinde 5. sınıf öğrencilerinin erişimlerine etkisi. Yayınlanmamış Yüksek Lisans Tezi, Hacettepe Üniversitesi, Eğitim Bilimleri Enstitüsü, Ankara.
- Varış ve Diğerleri, 1991. Eğitim bilimine giriş. (Editör Fatma Varış). Ankara Üniversitesi Basımevi.