International Journal of Contemporary Educational Research (IJCER)

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Article History
Received: 23.12.2020
Received in revised form: 06.05.2021
Accepted: 06.05.2021
Available online: 03.09.2021

To cite this article:

Sel, B. & Sözer, M.A. (2021). An action research to improve change and continuity perception in social studies. *International Journal of Contemporary Educational Research, 8*(3), 39-54. DOI: https://doi.org/10.33200/ijcer.845692

International Journal of Contemporary Educational Research
Volume 8, Number 3, September 2021, 39-54 ISSN: 2148-3868

An Action Research to Improve Change and Continuity Perception in Social Studies

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Abstract

The purpose of this study is to develop the students' skills of change and continuity through activities based on the objects in fourth-grade social studies. In alignment with the scope, an action research design was used in which the researcher is also the executor. A criterion sampling was used for recruitment which resulted in 17 fourth-grade students agreeing to participate in the study. Data collection tools included achievement test, open-ended questions, semi-structured interview forms, video recording and student journals. Wilcoxon signed ranks test, grading key and content analysis were used in the analysis of the data. The results of the study showed that there is a significant difference between the pre-test and post-test scores of students in object-based activities. Within the scope of change and continuity, it was seen that students can identify similarities and differences, make estimations on the perception of future time, discover the effects of sociocultural context along with change and continuity, provide chronological visual evidences, and put them in order. However, it was found that students can't develop multiple causality relationships related to change, that they interpret causes in relation to change and continuity from a limited perspective, that they do not consider different disciplines when expressing the powerful effects of technology in change processes.

Key words: Change and continuity, Social studies, Time skills.

Introduction

One of the most important barriers to understanding the history is the difficulties that students experience in understanding the change and continuity emerging in the process and comparing the similarities and differences between periods (Maxim, 1997; Waldron, 2003). The interaction that occurs within the scope of the concepts of change and continuity in the context of historical thinking causes students to experience numerous problems related to these concepts (Seixas & Peck, 2004). In addition, one of the least studied dimensions of children's historical thinking skills is the way they understand how and why people's lives have changed in the process (Barton, 2001, p. 887). Yet, Whitehouse (2015) considers change and continuity as a significant component of a holistic historical reasoning process. Understanding the change and continuity in historical events means setting forth the inner structure of the historical events and the clear and comprehensible interpretation related to the events (Tuna & Budak, 2013, p.637). Understanding the change and continuity enables students to see the past not as a homogenous whole or a series of events but as a complex flow of currents and counter-currents (Ford, 2015, p.10). In this context, the awareness of chronology is essential for the perception of change and the ordering of the events with chronology can be seen as a qualified start (Seixas & Morton, 2012; Wilschut, 2012). Perceiving chronology includes succession, change, continuity, the causes and consequences of change, or the speed of change and continuity; this is the focus and main principle of historical understanding and questioning (Cooper, 2012; Hoodless, 2002). Chronological thinking, unlike chronology, is more than just ordering facts and events as a more complex phenomenon that reveals cause-effect relationships and changes occurring in the process (Drake & Nelson, 2005, p. 81). Chronological thinking, unlike chronology, includes understanding the cause and effect relationship as a more complex phenomenon and the change in time (Aktın & Dilek, 2016, p. 130). With this aspect, perception of change and continuity constitutes one of the basic elements of chronological thinking and related historical understanding. Moreover, in the literature, it is visible that the perception of time and the ability to perceive the change and continuity are generally evaluated within

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This study is derived from the first author's doctoral thesis named "An Action Research Based on the Pedagogies of the Object for Improving Students' Skills of Change and Continuity in Social Studies".

the scope of the cause-effect relation (Cooper, 2004, Ellis, 2007, Ford, 2015; Seixas & Peck, 2004), future time (Hudson et al., 1995; Silverman, 1996; Thompson, Barresi & Moore, 1997), and sociocultural aspect (Barton, 2001; Cooper, 2001, 2012; Ford, 2015; Hodkinson, 2004; Seixas & Peck, 2004).

One of the basic elements that need to be addressed within the scope of change and continuity is considered causality. Change occurs due to multiple reasons and results in many different consequences (Ford, 2015, p. 9). It is important for students to understand causality relationships so that change and its consequences can be clearly perceived. Children with the skill in question find the opportunity to understand that the events occurring in the past, present or future happen based on certain cause-effect relationships rather than randomness. As the concepts of change and continuity and cause and effect are closely related, the tasks assigned to the students should generally involve these two elements (Seixas & Peck, 2004, p.6). According to Blow (2011), the concept of change is mostly ignored in the classroom and there are two underlying factors for this situation: The first factor is that the difference between teaching what changed in the past (for example, the French Revolution was a great change in history) and teaching the meaning of historical change (for example, was the French Revolution a big change for countries other than France?) can be easily blurred. The second factor is the frequently encountered failure to discover the nature of change-related concepts such as cause and effect. Therefore, it can be said that within the scope of change and continuity perception, causality is a factor as important as chronological thinking.

The perception of future time is also considered another element that requires to be approached within the framework of change and continuity. According to Silverman (1996), foresight requires children to understand the relationship between change and continuity and to know something about the rate of change for changing qualities. While children acquire the essential ways of organizing the complexity of the past with the ability to perceive change and continuity (Seixas, 2006, p.6), they can also create a vision regarding the future. In fact, especially change is a process with different speeds and patterns. The moments when the change process changes direction or speed are "milestones" (Seixas & Morton, 2012). Therefore, the child who designs "history" regarding the future must coordinate many levels of change and continuity together (Silverman, 1996, p.11). In this line, Counsell (2011) draws attention to the analysis of change and continuity (use of its scope/nature/type, speed, and proportional characteristics), and the types of questions related to change (e.g., "when?...questions", questions about starting and ending periods, questions about the characterization of the periods, questions about the speed or nature of the change.

Another factor to be considered in the teaching of the skill to perceive change and continuity is the sociocultural context. Historical changes arise from the actions of the historical actors and the social, economic, etc. conditions affecting these actors (Ford, 2015, p. 9). For example, continuity preserves its existence in the most concrete and obvious way for centuries in rituals, celebrations, traditions, language, in short, in culture. It may be important to build the perception of change and continuity as a part of the student's sociocultural environment. In fact, the most accessible historical information for primary and secondary school children is related to the changes in material culture and patterns of daily life (Levstik & Barton, 1994, p. 43). While students produce an understanding of history, they are more dependent on cultural transfer than the techniques they use in mathematics or science (Brophj & Vansledright, 1997, p.27). In the research conducted by Barton (2001), "cultural tools" that shape the understanding of change over time were taken as the basis, and in both the USA and Northern Ireland, socio-cultural differences in the way young children express how and why social and material life have changed over time. In a similar study conducted by Epstein (1997), the importance of sociocultural approaches in the historical understanding process was emphasized, and the experiences of students themselves or their families regarding ethnic identities and / or immigrant status were determined to be important factors in building their ideas about concepts such as historical understanding, representation, change, and empathy. In the study carried out by Levstik and Barton (1994), the focus was on the change over time, and it was seen that the most obvious and widespread response given by children was to detail the changes in material culture and everyday events.

As can be seen the ability to perceive change and continuity is also important in terms of teaching social studies for creating both chronological thinking and causality, and sociocultural context and a future perspective.
Although the ability to perceive change and continuity is included in many national and international curricula as a skill, the concepts in question bring along some problems in terms of the teaching dimension by their nature. Although change and continuity are obviously in the center of the history, effective teaching of these processes inevitably brings forward important difficulties (Vella, 2011, p. 16). For instance, it is difficult to define what is meant with "change" as the focal point of the students' analyses (Counsell, 2011, p.114). Problems experienced in the perception of change and continuity are often reinforced through teaching programs and in-class practices (Demircioğlu, 2005; Hayırsever, 2010; Kiriş Avaroğulları, 2014; Martin, 2013;

Öztürk, 2011). There are many studies which demonstrate that the ability to perceive change and continuity is positioned in the curricula in a "vague and inadequate form (De Groot-Reuvekomp, Von Boxtel, Ros & Harnett, 2014; Martin, 2013; Sel & Sözer, 2020). However, asking questions about time and change is the main element of historical inquiry, but teaching programs do not allow this to happen (Cooper, 2012, p.3). Although there are various deficiencies in the curricula within the scope of the ability to perceive change and continuity, a similar situation is reflected in the social studies textbooks. It was observed that the content in social studies textbooks was not sufficient to get the students to gain the ability to perceive change and continuity (Hayırsever, 2010), that in the majority of the fictional content in social studies and history textbooks, the change in space and space-related change were neglected, causing various historical anachronism problems (Öztürk, 2011) and that although this skill was similarly emphasized in the history curriculum, there was no balanced and adequate distribution (Kiriş Avaroğulları, 2014). In the studies on educational practices, in addition to the problems faced in curricula, it was observed in many studies conducted in the literature that in comparison to change, perception of continuity was more difficult for students (Çelik, Karadeniz & Cabul, 2018; Kabapınar & İncegül, 2016; Marancı, 2017; Safran & Şimşek, 2006; Tay, 2007). Accordingly, considering the rich and wide content covered by the social studies course, it is important to include continuity as much as change.

The ability to perceive change and continuity should not be seen as a simple "sorting" or "dating" process that is almost traditional through only time-related techniques and a strict perspective; it should also be built by considering factors such as cause-effect relationships, future time perspective, sociocultural context, etc. An understanding of change and continuity disconnected from the sociocultural context with a focus on the mechanical aspect of time is contrary to the nature of the relevant concepts. In this context, it has been stated that within the sociocultural context in question, cultural objects, which are frequently used in daily life and with which people are in a constant interaction, are important tools, that It is important to use material objects in teaching the ability to perceive succession and continuity in education (Wood, 1995, p.13), that continuity can be observed by students in social life and tools and equipment (Levstik & Barton, 1997, p.75), that students can acquire the sense of continuity by researching and exploring the past of their own families (Seefeldt, Castle & Falconer, 2015) and that the use of objects in teaching the ability to perceive change and continuity is important (Alleman & Brophy, 2003; Bage, 2000; Galan, 2016; Levstik & Barton, 1997). In this direction, the change and continuity occurring in items / objects are accepted as a projection or symbol of the experiences in economic, cultural, and political fields in relation to the people, societies and periods to which the item belongs to, sometimes directly and sometimes indirectly.

In this research, both the inadequacies in the social studies curriculum and textbooks and the difficulties experienced in practice were taken into consideration in the light of the studies examined in the literature regarding the ability to perceive change and continuity in the social studies course, and it was aimed to improve students' perception of change and continuity by using action research method based on cultural / historical objects. In this context, answers to the following sub-problems were sought:

1. Considering the object-based activities, is there a significant difference between the students' pre-test and post-test success scores?
2. What are the levels of students' expressing change and continuity and explaining with examples after the objects-based activities held in the fourth-grade social studies course?
3. What are the students' views on the objects-based activities carried out in the fourth-grade social studies course?

Method

Research Model

In the research, based on the collaboration with the relevant classroom teacher and students to develop the ability to perceive change and continuity in the social studies course, action research in which the researcher was also a practitioner was employed. In this context, the social and collaborative "participatory action research" model, in which the changeable situations put forward by Hendricks (2006) are determined within the scope of the theoretical framework, was utilized. Within the framework of action research, both qualitative and quantitative perspectives were adopted. Action research is based on not only qualitative methods but also quantitative and mixed methods (Chandler & Torbert, 2003; Creswell, 2002; Ivankova, 2014, Norton, 2009;

Torbert, 2000). According to Marti (2016)[†], the use of qualitative methods is considered as the most common way to integrate the conventional research methods into action studies; however, measurement is generally required to support the social action regarding how "things" are distributed, and the use of quantitative methods is not rare. Furthermore, Norton (2009) states that quantitative analysis methods (an experiment, an attitude scale or questionnaire; an observation study which involves counting; one that produces any information that is quantifiable) are useful for pedagogical action research.

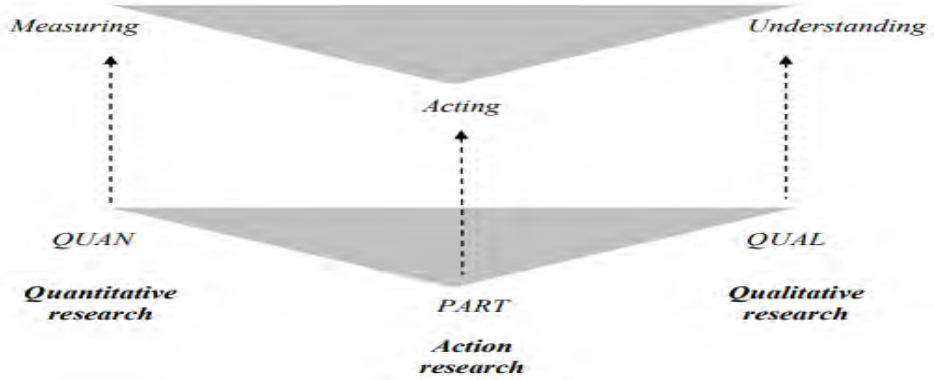

Figure 1. Methodological approaches, methods and aims. Baseline (and simple) model. (Marti, 2016, s.170)

As seen in Figure 1, Marti (2016) addresses this process as surveys and statistical analyses to collect quantitative data about the world (QUAN), qualitative interview, participant observation, and discourse analysis to discover the meanings from the actor's perspective (QUAL), and actions, meetings, and workshops containing a performative component to discuss the change (PART). In this research, in compliance with the nature of action research, the qualitative approach, as well as the quantitative approach and the conventional approach, were used to reveal the developmental process. At this point, it is necessary to note that the action research was not designed to prove or refute a hypothesis or to provide data that can be generalized over a larger population. The quantitative methods in an action research project should be used to portray what is happening in a certain situation (Johnson, 2014, p. 128).

When the literature is analyzed, it is seen that there are various views about the processes and stages of the action research (Elliot, 1991; Johnson, 2014; Mills, 2007). In this study, the action research steps designed by Kemmis and Mctaggart (1988) were used. According to the model in question, action research consists of planning, taking action, observing the process and result, reflecting, re-planning, repeating action, observing the process and result once more and reflecting again.

Action Process

In the first stage, the focus area was determined following the literature review; afterwards, the planning phase for the activities to be carried out in the action phase was started. In order to realize planning, within the scope of needs analysis, social studies curricula were examined, the literature review was carried out, and a preliminary interview was held with the classroom teacher about the inadequacies in the classroom. Based on this, the activities to be carried out were aimed to focus on the sub-components of the ability to perceive change and continuity (using chronology skills and chronological concepts within the scope of change and continuity, having a sense of future time, discovering similarities and differences during change and continuity, discovering the effects of sociocultural context during change and continuity, establishing a cause-effect relationship, and associating change and continuity experienced with different disciplines).

As can be seen in Figure 2, after needs analysis, three cycles were determined in cooperation with the classroom teacher, namely "preparation of object time capsule, thematic timeline based on the object and project on the history of the object", reflection and re-planning processes were carried out after each cycle was completed with the classroom teacher.

[†] Marti (2016) asserts that action research employs both qualitative and quantitative methods, but the special role of the latter in such studies is discussed very rarely. In its designs, action research concentrates on how qualitative methods can be integrated into participant dynamics. On the other hand, the specific contribution of quantitative methods to action research has been ignored in this field for a long time (Chandler & Torbert, 2003, p.148).

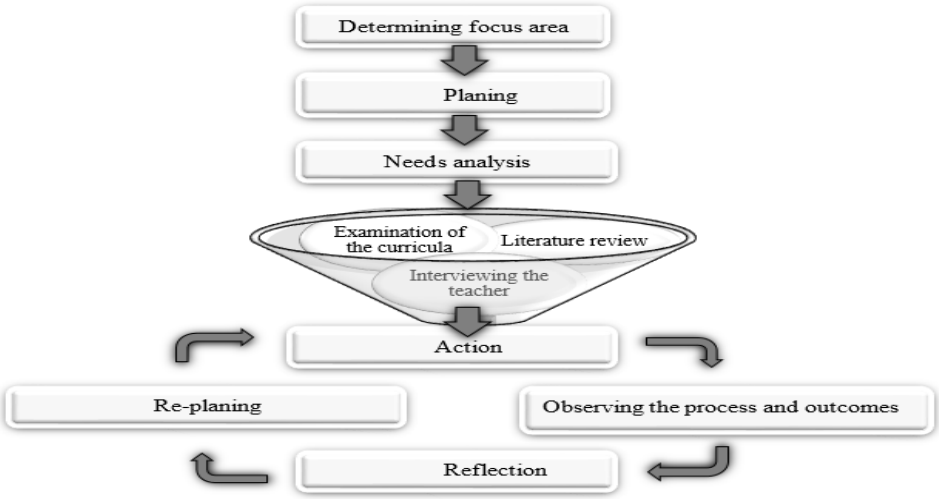

Figure 2. Action research application process.

In the first cycle, the students were asked to open the object time capsules[‡] consisting of old objects and prepared by the researcher, and a discussion was held on what has changed in terms of objects, what objects have maintained their continuity, the factors that have caused change and continuity in question and their consequences, the positive and negative reflections of this situation (health, communication, economics, etc.), the similarities and differences compared to today, and what kind of change the objects would display in the future, and worksheets were distributed. Then, they were asked to prepare time capsules based on the objects they thought would give more information about change and continuity 100 years from now, and the time capsules were presented in the classroom. The first cycle took place within three weeks. After the first cycle, inadequate and superior situations were evaluated together with the classroom teacher, and the second action plan was determined in this way.

In the second cycle, a video of a sample project on the history of the object was shown to the students, and in addition to the material change and continuity experienced in the objects, an in-class discussion was held on change and continuity in the lives of family members in sociocultural, social, economic, etc. areas along with the objects. The students were asked to determine an object and an elderly family member by whom they can reflect the change and continuity in a qualified manner, and to carry out a historical object study regarding the story of the change of a historical object and report it. Research reports were presented in class along with the object. The second cycle took place within four weeks. After the second cycle, inadequate and superior situations were evaluated together with the classroom teacher, and the second action plan was determined in this way.

In the third cycle, thematic time strips based on the object were used to place and display the change and continuity of a historical object on a specific chronological axis. In the first stage, an in-class discussion was held over the sample thematic time strip and whether the images related to the object represent the relevant period, what changes occurred in the objects as time progressed, the consequences that were created by these changes and continuity, why the change was needed, after how much time the change took place, the course of the speed of the change, and the importance of chronology in expressing continuity were emphasized. Then, students were asked to prepare their own time strips for the object they determined, to visualize and explain the change and continuity in this direction by considering the related time factor. The third cycle took place within three weeks.

[‡] All activities within the cycles have been prepared in relation to the acquisitions in the “culture and heritage learning area” in social studies.

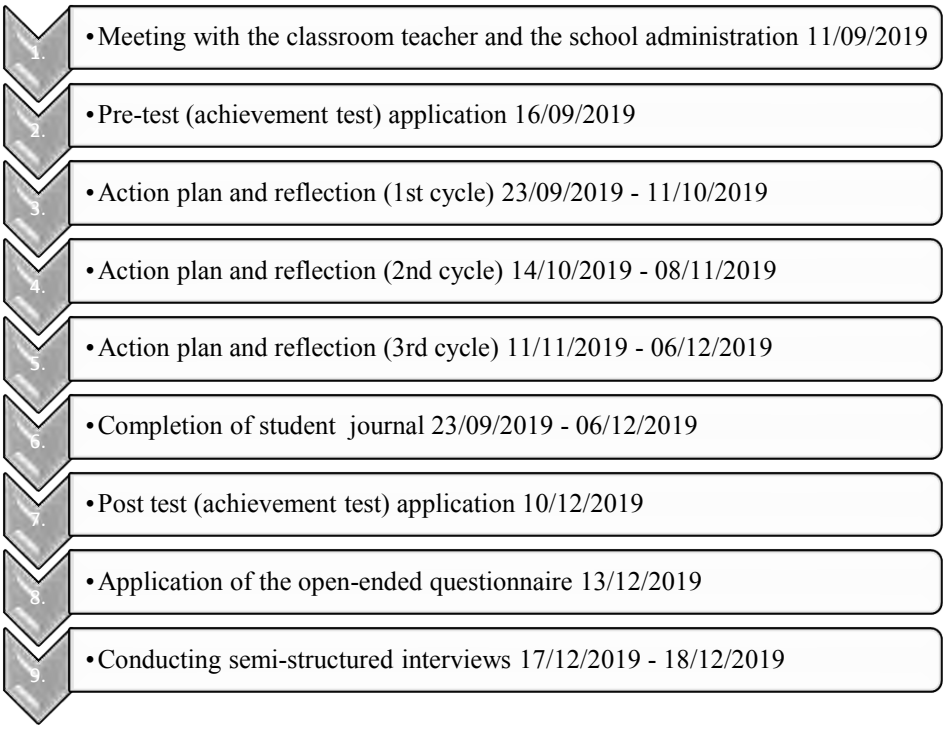

Figure 3. The processes of the action phase.

Study Group

The study group is composed of 17 fourth-grade students receiving education at a primary school affiliated to the Ministry of Education in Turkey in 2019. Voluntary participation of the students in the research was ensured, necessary official permissions were obtained related to the research, and code names were assigned to the students. In accordance with the nature of the action research, it is important that the study group must be in the context of the problem within the scope of the ability to perceive change and continuity. For this reason, in the research, particular attention was paid to ensure the existence of some deficiencies related to the ability to perceive change and continuity among the students regarding the current problem status, to determine the status of the existing problems by referring to the teachers' opinions, and to ensure that the students participate voluntarily. Before the action process, a semi-structured interview was held with the classroom teacher. In parallel with the data obtained from the literature review during the interview process, it was stated by the classroom teacher that it is much more difficult for students to perceive continuity according to change. In addition, the classroom teacher stated that the close environment of the children and the sociocultural context were ignored. She stated that the fourth-grade social studies curriculum does not include change and continuity, except for certain themes, that the positive and negative aspects of change are addressed, visuals and textbooks are used in practice, and the time and measurement tools are insufficient. Based on the data obtained in this process, the needs analysis process has been completed and the planning phase of the activities has started.

Data Collection Tools

Within the scope of the research, a four-choice multiple-choice achievement test for the first sub-problem, an open-ended questionnaire for the second sub-problem, semi-structured interview forms and student journals for the third sub-problem were used.

In the first stage, a four-choice multiple-choice draft form was prepared by the researcher regarding the ability to perceive change and continuity for the "Culture and Heritage" learning area[§]. Then, by taking expert opinion, Lawshe (1975) technique was used to determine the content validity. Within the scope of Lawshe technique, 8 experts were consulted and the content validity index of the test was determined as 0.81. Considering the critical

[§] This learning area has been chosen for both the achievement test and the open-ended question form since it includes more acquisitions about the ability to perceive change and continuity.

values determined by Lawshe (1975) together with the opinion of 8 experts, since the content validity index was greater than 0.78, it can be stated that the content validity of the achievement test developed was high. The rates of content validity were calculated by proportioning the number of the experts who considered the item "necessary" to the half of the number of the experts who presented their opinions about the item.

For the achievement test, the pilot application was carried out with a total of 178 students studying in the fourth grade, and after the pre-application, each correct answer was scored as "1" and each wrong answer was scored as "0". Factor analysis based on tetrachoric correlation matrix was applied for the construct validity of the developed achievement test. Tetrachoric correlation matrix is used when the data are artificially categorized into two categories although they display a continuous and normal distribution (Baykul, 1999; Şencan, 2005). As a result of factor analysis based on tetrachoric correlation matrix, six items were discarded, and it was observed that the achievement test consisting of 33 items had a one-dimensional structure.

In terms of reliability, the KR-20 value of the achievement test was determined to be 0.91. KR-20 value for tests containing 10-15 items should at least be 0.50, and for tests containing more than 50 items, it should be 0.80 and above (Kehoe, 1995, p.1). For the item statistics of the achievement test, the item difficulty and the single point double series correlation coefficients of the test were calculated. The item difficulty index of the items ranged between 0.41 and 0.84. The critical range for item difficulty values of a four-option test designed to measure the skill level is supposed to be between 0.20 and 0.80 (Crocker & Algina, 1986). Accordingly, it can be said that the prepared achievement test contains low, medium and high difficulty level items. The item discrimination of the items varied between 0.36 and 0.67. In terms of item discrimination index, items with a value of 0.40 and above are considered as highly discriminating items, items between 0.30 and 0.39 are accepted as items that are suitable but need improvement, items between 0.20 and 0.29 are thought to be items that are marginal and need correction, and items below 0.19 are accepted as items to be removed (Ebel & Frisbie, 1986).

Secondly, in the open-ended questionnaire prepared based on images, expert opinion was taken for content validity. The content validity index obtained according to the Lawshe technique was found to be 0.79. Considering the critical values determined by Lawshe (1975) together with the opinion of 8 experts, since the content validity index was greater than 0.78, it can be stated that the content validity of the open-ended questionnaire developed was high. Difficulty indexes of the items in the open-ended questionnaire were between 0.63 and 0.78, and discrimination indexes ranged from 0.39 to 0.67.

Thirdly, a semi-structured interview form consisting of six questions was prepared by the researcher. Expert opinion on the interview form was obtained. Also at the beginning of the research, notebooks that can be used daily were distributed to the students by the researcher. After each activity, from the students to the diary; what he/she learned that day, what he/she felt, what processes he/she had difficulties, how he/she produced solutions, etc. they were asked to write. It is very difficult for the researcher to evaluate himself systematically, as the researcher is also practitioner in the action research process; for this reason, video cameras can be used to record all or part of the lesson (Johnson, 2005). Video recordings are considered invaluable for qualitative research as they allow analysis of events and micro-scale analysis (Glesne, 2013, p.110). In this context, the research process was supported through video recording and a digital camera was used.

The Role of the Classroom Teacher in the Action Research Process

Cooperation between stakeholders who are parties to the problem and sharing experiences form the basis of action research. A preliminary interview was held with the classroom teacher in order to determine the focus area during the needs analysis stage of the planning process. After each action plan that was carried out during the action research process, evaluation was made with the classroom teacher, strengths and weaknesses were determined, and opinions were taken to prepare the next action plan. It is very important to evaluate the learning products obtained during the process with the classroom teacher in terms of perceiving change and continuity, and to interpret the development of the students in this sense together. In addition, an effective cooperation was made in terms of informing the parents of the students, ensuring the order of the class, realizing the activities and data collection processes.

Ethical Principles in the Action Research Process

Ethical principles to be considered in action research have been classified as preparation of ethical documents (ethical statement, permission request document and official permit document), negotiation

(principals/administrators, participants and parents), ensuring confidentiality (confidentiality of information, data, identity), ensuring the right of participants to withdraw from research, professional and academic behavior commitment, and preservation of goodwill (McNiff & Whitehead, 2010, p.76-78). The personal information of the students and the classroom teacher who participated in the research were kept confidential, code names were given, and necessary permissions were obtained from official institutions and organizations. The students, parents and responsible classroom teachers were informed about the issues such as the purpose of the research, the confidentiality of the data collected, reporting of the results for what purpose they would be used, the privacy of personal information, etc.

Data Analysis

When analyzing and interpreting the data collected in participatory action research, it is important to try to reflect the perceptions of all stakeholders involved in the study (Fraenkel, Wallen & Hyun, 2011, p.594). For this reason, in the analysis of student products and data obtained after each action plan, collaboration with the classroom teacher was made. In the first sub-problem, Wilcoxon signed-rank test was used by employing the SPSS22 program. In the second sub-problem, evaluation was made using a rubric. Each criterion included in the rubric was graded as insufficient (1 point), needs improving (2 points), largely sufficient (3 points) and excellent (4 points). The lowest grade that could be obtained from the rubric was 11, and the highest grade was 44. While determining the range coefficient in the rubric, the formula "(highest grade - lowest grade) / number of criteria" was used. For the third sub-problem, content analysis method was used. Accordingly, the average scores obtained from the grading key were evaluated as follows: “insufficient” between 1-1.75 points, “needs improving” between 1.76-2.51, “largely sufficient” between 2.52-3.27, and “excellent” between 3.28-4.00.

Results and Discussion

Findings obtained in line with the first and second sub-problems are presented under two separate headings.

Findings Regarding the Difference Between Students' Pretest and Posttest Achievement Scores

The results of the Wilcoxon signed-rank test performed in line with the first sub-problem are shown in Table 1.

Table 1. Wilcoxon signed-rank test results

	n	Mean rank	Rank total	*Z*	*p*
Negative ranks	1	1.50	1.50	-3.334	.001*
Positive ranks	14	8.46	118.50		
Equal	1				
Total	16**				

As seen in Table 1, it was observed that there was a significant difference between the pretest and post-test achievement scores of the students according to the Wilcoxon signed-rank test result ($Z=3.334$, $p<0.05$). Considering the mean ranks and totals of the difference scores, it is seen that this difference was in favor of positive ranks, that is, the post-test score.

Findings Regarding Students' Expression of Change and Continuity and Explanation with Examples

For the second sub-problem of the research, an open-ended questionnaire based on images was applied to the students, and the data obtained were analyzed with an open-ended questionnaire rubric. Findings related to the mentioned analysis are presented in Table 2:

** Since one of the 17 students who constituted the study group could not participate in the post-test application, the analyses were performed on a group of 16 people.

Table 2. Results from the open-ended questionnaire

	Item no	*n*	$\overline{X}$	Level
Image A	A1	17	2.59	Largely sufficient
	A2	17	2.53	Largely sufficient
	A3	17	1.76	Needs improving
	A4	17	3.09	Largely sufficient
Image B	B1	17	2.70	Largely sufficient
	B2	17	2.76	Needs improving
	B3	17	2.65	Largely sufficient
	B4	17	3.06	Largely sufficient
Image C	C1	17	2.59	Largely sufficient
	C2	17	1.76	Needs improving
	C3	17	3.06	Largely sufficient
Overall average	11	17	2.57	Largely sufficient

As it can be seen in Table 2, A1, A2, A4, B1, B3, B4, C1, C3 items were evaluated as "largely sufficient" and A3, B2, and C2 items were evaluated as "needs improving." The general average obtained from open-ended questionnaires prepared based on images A, B, and C (X 2.57) was determined to be “largely sufficient”.
When the students' scores obtained from open-ended questions were evaluated, within the scope of change and continuity, the level of responses given to the item (A1) which examines the status of “using chronology skills and chronological concepts” was determined to be "largely sufficient." In this item in question, the students were asked to rank the living spaces in the images from past to present in a chronological order and to explain the reason for their ranking. Below are some examples of answers given to item A1 by the student coded K10::
“Because these buildings are everywhere. The buildings reflect the present time. They have balconies, multiple floors, solid materials, doors, and windows. Others are old...” (K10).

When the answer given by the student coded K10 is examined, it is seen that the living spaces were sorted chronologically and that the reason for the chronological order was explained by considering the changes in the structural features of the houses and similar residences in the vicinity.

The level of responses given to the items (A4, B4, and C3) that examine the status of “having the sense of future time” was determined to be “largely sufficient”. For example, regarding the possible changes that may occur regarding the future in item C3, the students were asked to imagine a machine that would save time and electricity, which could be used to meet the need for cleaning in the future and to explain its features. Accordingly, some of the answers given by the students are exemplified as follows:

“The name of the machine is an ultra mega washing machine. It has the features of working with natural boron reserves and drying. It will also produce its own power...” (K5).

When the above answer given by the student coded K5 is examined, it is seen that regarding change in the future, s/he dreamed of a machine that could work with the natural boron mineral and produce its own energy.
The level of responses to item (B3) prepared for “discovering the effects of the socio-cultural context throughout change and continuity” was evaluated as “largely sufficient”. In this regard, students were asked to take into account the changes experienced between child games and today's children's games, and to express the effects of this change on sharing and friendship values. The answer given by the student coded E6 is given below:

“Sharing and friendship were very nice in the past. However, later, digital games appeared. Children became introverted, and their social ties got broken. They do not talk to anyone anymore. Everyone is competing. But friendship existed in the past...” (E6).

Emphasizing the digital games, the student coded E6 stated that the change in question locked children within the home, negatively affected their social relationships and led them into a race.

Within the scope of change and continuity, the level of responses to the items related to "establishing cause-effect relation" (A3, C2) was determined as "needs improving". In this context, for example, in item C2, students were asked to evaluate the results of the change experienced in meeting the cleaning needs of people positively and negatively. However, the vast majority of the students had difficulties in revealing the positive and negative results of the change, and but they came up with mostly one-dimensional results. The positive and

negative results of the change could not be evaluated from multiple perspectives. The response given by the student coded E5 is as follows:

"*The positive results of the change: Technological devices have made today's tasks easier. The negative results of the change: Detergents used today are harmful to health as they are made of chemicals..."* (E5).

The student coded E5 explained the positive result of the change as the facilitation of the human life and the negative result as the harm caused by cleaning materials in human health.

In item A3 regarding establishing a cause-effect relationship within the scope of change and continuity, the students were asked to evaluate the negative results of the change in the houses human life from the perspective of environmental problems. The vast majority of the students could not evaluate the results of the change in the context of "environmental problems", and they gave more general and sometimes irrelevant and distant answers. *"It is possible that neighborhood relationships existed among people in Image 6 while neighborhood relationships of people came to an end due to the increasing number of the buildings in Image 8."* (K6).

The student coded K6 tried to explain the results of the change in the houses in terms of communication, far from the relevant context (environmental problems).

While the students had difficulties in answering open-ended questions in different areas as regards establishing cause-effect relationship (changes in the construction of houses and meeting the cleaning need) within the scope of the ability to perceive change and continuity in general, they were able to provide relatively more qualified answers to the questions asked in areas close to their environment and everyday life (changes in traditional children's games). In this regard, students were asked to consider the changes between the children's games that have been forgotten and the children's games of today, and based on the images; they were requested to evaluate this change in terms of "health" and "communication". The similar response of the student coded K2 to the same question is as follows:

"Negative results in terms of health: We may have weaker eyesight, our bodies can be harmed, we may be exposed to radiation. Negative results in terms of communication: People are alienated from each other, their psychology may be deteriorated, and their communication comes to an end..." (K2).

It is seen that the student coded K2 associated the results of change in terms of health with vision problems, inactivity, and exposure to radiation, and in terms of communication with psychological problems and inability to communicate.

In general, when the findings obtained from students' responses to open-ended questions within the scope of the ability to perceive change and continuity were evaluated, it was seen that they gave responses at the level of "largely sufficient" for items regarding using chronological concepts and skills (A1), identifying similarities and differences throughout change and continuity (A2, B1), having a sense of future time (A4, B4, C3), and exploring the effects of sociocultural context throughout change and continuity (B3). However, it was seen that their responses to items (A3, B2, C2) related to associating change and continuity with different disciplines and establishing cause and effect relationship were at the level of "needs improving". In this context, it was observed that students had difficulty in evaluating the positive and negative results of changes in subjects far from their daily life, experiences, and close surroundings, while they evaluated the results of the change in questions prepared based on traditional children's games in a versatile and qualified way. In addition, it is seen that they were able to evaluate the positive or negative results of the change from a limited perspective and that they emphasized the impact of the change on a "single and specific" area only.

Findings Regarding Students' Views on Object-Based Activities

The data obtained from the semi-structured interview process and student journal were analyzed by content analysis method. The categories, codes, and usage frequencies that emerged as a result of the analysis are given below.

Table 3. Results of content analysis

Categories	Codes	f	%
Obtaining information through activities	Learning past life patterns	13	13.82
	Developing predictions for the future	3	3.19
	Learning cultural elements	4	4.25

	Learning the differences between the past and the present	6	6.39
	Make a chronological order	4	4.25
	Discovering new objects	4	4.25
Activities creating positive feelings and thoughts	Events create excitement	5	5.33
	Activities attract attention	7	7.45
	Activities are nice	21	22.34
	Activities are fun	18	19.15
Difficulties/problems experienced during the activities	Activities requiring a long time / being time consuming	4	4.25
	Difficult activities	2	2.13
	Boring activities	1	1.06
	Difficulty in finding historical objects in events	2	2.13
Total		94	100

As a result of the content analysis; three main categories were determined: obtaining information through activities (f=34), activities creating positive feelings and thoughts (f=51), and difficulties/problems experienced during the activity process (f=9).

In the category of "obtaining information through activities", students stated that they most frequently learned about life patterns in the past (f=13), and least frequently developed predictions about the future (f=3). In the category named “activities creating positive feelings and thoughts (f 5 1”); it is seen that it is dealt with much more frequently when compared to the categories of "obtaining information through activities (f=34)" and "difficulties/problems experienced in the activity process (f=9)". In this context, it is noteworthy that students' views on item-based activities are expressed more affectively. In the third category, "difficulties/problems experienced during the activities", there are negative opinions and thoughts of the students about the activities. In this category, which emerges with a very low rate compared to the other two main categories; it is seen that activities require a long time/time consuming (f=4), activities are difficult (f=2), activities are boring (f=1) and there are difficulties in finding historical items in activities (f=2).

Conclusion

In this study, it was determined that there was a significant difference between the students' pretest achievement scores and the post-test achievement scores in favor of the post-test in the fourth-grade social studies course activities carried out within the scope of the ability to perceive change and continuity. Accordingly, activities of preparing object time capsule, doing a project on the history of the object, and creating a thematic timeline based on the object within the scope of the three actions plan contributed to the development of students' ability to perceive change and continuity. Time capsules offer educational support for children to understand the sequence of the events, the relations between the events, and how these events fit the general scheme of the historical time (Rowell et al., 2007), and to realize how much they have changed and how their environments have changed (Zayimoğlu Öztürk, 2017; Zayimoğlu Öztürk & Öztürk 2018). Additionally, there are studies indicating that the studies on oral history, just like the studies on the history of the material, contribute to the students’ ability to perceive the change and continuity (Dere & Kalender, 2019; Doğan, 2015; Kabapınar, 2014; Kabapınar & Sağlamgöncü, 2016; Von Heyking, 2017; Yazıcı & Mert, 2017; Yow, 2015). Similarly, in the literature, there are studies that state that the use of objects is functional and important in the perception of succession and continuity in terms of both social studies and history teaching (Wood, 1995) and that draws attention to the effective use of objects in this sense (Alleman & Brophy, 2003; Bage, 2000; Galan, 2016; Hickey, 1997; Kabapınar & Sağlamgöncü, 2017; Levstik & Barton, 1997). It is observed that similar results were obtained in the researches which were carried out based especially on the objects that are used in daily life or which have deeper historical/cultural labels. In this context, in the research conducted by Akça Berk and Gültekin (2012), it was stated that even the change of motifs in carpets, rugs, and saddles over time is a reflection of the change in the aesthetic understanding of the society; in the research conducted by Kırpık (2012), it was expressed that based on the hat, various objects or symbols are representative of changes in society and are an important historical reference in this context. Similarly, in the research titled “To touch, to feel, to see: Artifact inquiry in the social studies classroom” conducted by Field, Labbo, Wilhelm and Garrett (1996), it was suggested that as a means of revealing the concepts of social studies and integrating students into the learning process, objects should be used to understand practices and individual values, to make intercultural comparisons, and to compare changes over time. Rule and Sunal (1997) stated that the objects of the past exist everywhere, in the home, school, and society that they have a history and they undergo a change accordingly, and even a frequently used object like "button" can be surprisingly useful in revealing how technology, fashion

and physical materials have evolved over time. Use of a historical or cultural item/object suitable for the ability to perceive change and continuity, especially for young students can contribute to the development of the student's ability to access the unrecorded raw data of the past, to conduct a research in the role of a social scientist on objects and to perceive change and continuity in this direction. In this respect, it is important to concretize abstract concepts such as change and continuity through cultural objects/items from the child's immediate environment which shed light on the past and assume the task of historical memory.

In the context of the second sub-problem, when the findings obtained from the open-ended questionnaire about expressing change and continuity and explaining with examples were examined, it was observed that students responded to the items regarding using chronological concepts and skills, identifying similarities and differences throughout change and continuity, having a sense of the future, and discovering the effects of the socio-cultural context throughout change and continuity at the level of "largely sufficient". On the other hand, it was seen that their responses to the items related to associating the change experienced and continuity with different disciplines and establishing a cause-effect relationship were at the level of "needs improving". While it is important for students to build causality relationships within the scope of perception of change and continuity, it is seen in the findings obtained in the research that students were unable to provide adequate answers. In the studies conducted in the literature with a similar approach, students had difficulty in revealing the cause-effect relationships within the scope of change and continuity and accordingly the effects of change (Barton, 2001; Blow, 2011), and it was observed that the causes of change were often expressed in a "technological" context (Kabapınar & Sağlamgöncü, 2018; Özen, 2010; Şimşek, 2006). In a study conducted by Barton (2001), it was stated that although the young children showed differences regarding the period, they had various difficulties regarding “why” the change was experienced. In this study, the children had some difficulties in evaluating the reasons for the change or the positive and negative outcomes of the results it created, and they were observed to have made more technology related explanations. When the literature is examined, it is seen that “technology” takes the first place in the process of defining change and expressing change with examples within the framework of perception of change and continuity with a similar approach (Kabapınar & Sağlamgöncü, 2018; Özen, 2010; Şimşek, 2006). One of the main reasons here can be seen as the fact that most of the concrete change examples that the child often encounters in daily life are directly or indirectly related to technology. In addition, technological changes are situations that contain more concrete outputs compared to cultural, social, or economic changes, and these concrete outputs play an important role in the child's life. For example, positive or negative outcomes of a technological innovation create effects felt more strongly in the daily life of the child in comparison to other disciplines. In this context, children had less difficulty in expressing the factors that cause change or the results of the change with an emphasis on technological changes in comparison to other areas. In addition, students who had difficulty in answering open-ended questions asked in different fields for establishing a cause-effect relationship were able to provide relatively more qualified answers to the questions asked in areas close to their environment and everyday life. In this context, it is thought that it is important that the examples brought to class within the scope of change and continuity should emphasize the close environment of the child in the first stage.

When the views of students regarding the activities carried out are evaluated, it is seen that there are explanations that address the affective dimension with a much higher intensity than the categories of "obtaining information through activities" and "difficulties/problems experienced in the activity process". In this context; it has been stated that using interesting concrete objects can be intriguing and encourage children to question historical questions (Gandy, 2005), students find the objects intriguing and mysterious (Hickey, 1997); and that objects can encourage them to solve the historical mystery in an interesting way (Russell, 2014). Also; Russell (2014) states that object-based activities include the opportunity to access more than one learning style. In this context, especially historical objects can contribute to students in an affective dimension as well as in cognitive dimension. Based on the findings obtained from the research, the following suggestions were made: preparing object time capsule, doing a project on the history of the object, and creating a thematic timeline based on the object. In this study, it was observed that the use of object-based activities (object time capsule, project on the history of the object, thematic timeline based on the object) in the social studies course contributed to the development of students' perception of change and continuity. In teaching various concepts such as time and chronology, in terms of teachers to avoid dependence on textbooks, the use of historical evidence such as cultural items/objects more in social studies courses should be encouraged. It was observed that students could not associate change and continuity with different disciplines from a singular point of view, could not establish causal relationships, and generally explained change and continuity on the axis of “technology” and gave examples. The skill in question can be incorporated especially in textbooks and social studies curricula by associating it not only with subjects focused on "technology" but also with various disciplines such as culture, geography, tourism, migration, human rights, etc.

Recommendations

Within the scope of the ability to perceive change and continuity, this research employed an action research model with a qualitative perspective. However, there is also a need for correlational, comparison-based, or experimental studies in which the ability of perceiving change and continuity is examined through variables such as age, language, mathematical skills, socio-economic level, etc. Change and continuity perception and causality relationships are closely related. However, in this study, it was observed that the answers given to the items aiming to establish a cause-effect relationship within the scope of the ability to perceive change and continuity were insufficient. In this context, the ability to perceive change and continuity can be limited within the scope of "causality", and empirical studies can be conducted on this relationship.

Limitations

This research has some limitations. Action plans on the ability to perceive change and continuity have focused only on the "Culture and Heritage" learning area. The main reason for this situation is that the social studies curriculum does not include enough ability to perceive change and continuity. In addition, when the sociocultural structure affects the ability to perceive change and continuity, it can be considered as another limitation that the participants live in a similar sociocultural environment. Participants from different sociocultural backgrounds may be considered for further research.

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