Pre-service Social Studies Teachers' Opinions on Using Comic Books in Social Studies Teaching

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Abstract

In the age of technology which is ever changing and developing, not only the technologies but also the generations have different characteristics. Therefore, the methods and the materials used in teaching are changing as well. Today, comic books are one of the materials that are used for bringing students' attention into the class and motivating their active participation in the class. This study examines the opinions of the 4th-grade pre-service social studies teachers, who are educated in preparing comic books, on designing and using comic books in social studies teaching. This research is a descriptive study. The study was carried out in the 2018-2019 school year with the pre-service social studies teachers, who continue their education at a university in western Turkey. The practice of the preparation of comic book panels was carried out for six weeks. Before and after the comic book preparation practices, participants took surveys with open-ended questions that were provided by the researchers. The data acquired from the open-ended survey forms are used for content analysis. According to the findings obtained throughout the research, it has been concluded that the fourth-grade pre-service social studies teachers, who are trained in preparing comic book panels, have positive views on preparing and using comic books in social studies teaching. Several propositions are made in light of these findings.

Contents

Contribution of this paper to the literature
The contribution of this research to the related literature, the fourth-grade pre-service social studies teachers have positive views on designing and using comic books in the social studies courses teaching especially in teaching history subjects. That is why in the training of the social studies teachers, it is necessary to offer course options on specific subjects focused on making different course materials that are more suitable for technology-assisted innovative classrooms.

1. Introduction

Evolving technology and generations bring new perspectives to education. Especially Generation Z (those who were born in 1997 or after) can be described as digital students who grew up in familiarity with technology (Adıgüzel *et al.*, 2014). As a natural outcome of the fast advancement of technology and diversification of generations, the materials used in classes are varied in terms of technology. With the constructive approach emphasized in the teaching programs in Turkey, it is aimed to have students to engage various materials and to involve in an active learning environment. As a matter of fact, it was observed that active-based lessons increased the students' interest towards the social studies lesson in the activity-based practice examples (Avaroğulları and Capar, 2016; Akbaba *et al.*, 2019). Both the education for pre-service social studies teachers and the social studies curriculums at the secondary school level (MEB (National Ministry of Education), 2018) emphasize technological competency.

It is known that the main course materials used in social studies lessons by both teachers and students in secondary schools are course books. In addition to different methods and techniques, teachers are expected to utilize different materials during lessons in order to attain greater student participation. As in many other countries in the world (Pegrum *et al.*, 2013) schools are starting to give greater importance to technology in Turkey as well (Aslan and Görgen, 2015). Due to these developments, it is inevitable that the technology supported materials prepared by teachers and students are going to be used in schools in the near future. Additionally, current research in education indicates that use of comic books in social studies education enhances motivation and academic achievement of students (Ilhan and Oruç, 2019; Unal and Demirkaya, 2019). For this reason, teachers, who play important roles in organizing the teaching environment, are required to gain experience in this subject both in their teaching career and in their vocational life.

In fact, according to the study by Aslan and Görgen (2015) it is found that teachers are aware of teaching technologies and materials, but they need further instructions for putting them into use. Also (Kormos, 2019) stated new social studies teachers with limited experience and unfamiliarity with technology often hesitate to seek and find new technology for their classroom. This study will participate in the literature about views of social studies teacher candidates regarding design and use of technology supported teaching materials.

A review of the studies focusing on comic books' use as teaching materials (Topkaya and Simşek, 2015; Ilhan, 2016; Orçan and Kandil, 2016; Topkaya, 2016) shows that the research participants of these studies usually comprised of secondary school and high school students. Furthermore, in these studies, the comic book panels that were prepared according to the research themes by the researchers who carried out the studies themselves or the published and commercially available comic books were used as teaching materials. Any other study that captured the views on using comic books in social studies teaching after conducting an experimental practice with pre-service social studies teachers has not been found. In this paper, where pre-service social studies teachers design comic book panels for social studies teaching and then give their opinions on the use of comic books in social studies teaching based on their experiences and observations. This study is thus important for filling a gap in the literature and demonstrating the exemplary practices that are carried out during the experimental procedure.

The question of this study is stated as "What are the opinions of the 4th-grade prospective social studies teachers on the use of comic books in the social studies teaching based on their experience in making comic books?" For this purpose, the design of a comic book was done to the pre-service teachers. Based on these experiences, opinions about designing and using comics in social studies lessons were taken. Kormos (2019) state it is important for teacher education programs to implement one-on-one mentoring.

2. Literature Review

Comic books are one of the opportunities offered by advanced technology for use in a class environment. A comic book is a form of art, where pictures and text come together around a fiction, and which contains sequences (Eisner, 1985). The significant increase in the number of comic book publications both in Turkey and in the World and the comic book publications of lives of historical figures intended for children demonstrate that the interest in comic books is also present in the education (Cantek, 2014). According to multiple studies in different disciplines, the comic books are found to have positive effects on the student achievement and attitude towards classes (Kılıçkaya and Krajka, 2012; Topkaya and Simşek, 2015; Ilhan, 2016) on creative thinking (Orçan and Kandil, 2016) on critical thinking (Krusemark, 2016) and on increased quality of grammar use and sentences (Kılıçkaya and Krajka, 2012).

Social studies can be described as a course, which utilizes the information and methods it takes from social sciences (history, geography, archeology, law etc.) in order to train active citizens who are capable of making decisions and solving problems under changing circumstances (Oztürk, 2009). In this course, creating new materials with the help of technology is also important for attracting the attention of new generations. Along with this line of thought, in using technology not just as a tool but as effective teaching material in order to create innovative educational environments in social studies teaching, teachers and pre-service teachers are required to use different materials or be able to create them. Although there is a consensus that using visual materials in social studies lessons positively affect learning (Celikkaya, 2013) it is found that course materials are not utilized effectively in social studies courses (Ulusoy and Gülüm, 2009) and students have a low rate of preparing materials in social studies courses (Sanlı, 2018). The study by Celikkaya (2013) showed that social studies teachers use the

blackboard, the map, and written materials (encyclopedias, journals etc.) the most, whereas they use timetables, computers, projectors, panels (bulletin boards), newspapers, chart, and tables several times in a month.

Creating new materials with the help of technology is especially important for attracting the attention of new generations. Therefore, teachers and pre-service teachers should be able to use or prepare different materials in order to make use of technology not only as a tool but also as effective teaching material in creating innovative teaching environments in social studies teaching. Kormos (2019) stated that educational technologies provide social studies teachers an ability to create a student-centered learning environment and promote 21st-century skills. Actually it is clear that social studies teachers need in-service training in preparing technology supported materials. As a matter of fact, social studies teachers take "Teaching Technologies and Material Design" course as a compulsory course during their training in teaching. Among the goals of this course are giving pre-service teachers the skills to make use of technological tools and to design and develop original materials (Uzunöz *et al.,* 2017). Also, in social studies teaching undergraduate programs, there are elective courses focusing on using technology effectively, such as "Computer Assisted Education" and "Computer-Based Education". This way, pre-service teachers are encouraged to prepare and use teaching technologies in their pre-service training programme. Prospective teachers who do not already have knowledge and skills related to technology integration may not be consistently adopted in the teaching of technology in social studies lessons (Gulbahar and Guven, 2008; Kormos, 2019).

A comic book is one of the new opportunities in the class environment given by advancing technology. The comic book is a form of art, where pictures and text come together around a fiction, and which is composed of sequences (Eisner, 1985). In comic books, pictures and texts are used in conjunction when conveying the behaviors, actions, emotions, and thoughts of the comic book characters in their adventures to the reader (Yağlı, 2018). As in the rest of the world, there has been a significant increase in comic book publications in recent years in Turkey as well (Cantek, 2014). Especially the publication of comic books that are geared towards children and focused on the lives of historical characters makes them promising sources to be used in teaching. The studies on using comic books in classes as teaching materials also attest to this observation. Various studies in different disciplines found that comic books have positive effects on students' success and attitudes towards the class (Kılıçkaya and Krajka, 2012; Ilhan, 2016; Topkaya, 2016) creative thinking (Orçan and Kandil, 2016) critical thinking (Krusemark, 2016) and the quality of sentences (Kılıçkaya and Krajka, 2012). There is no study focusing on the opinions of prospective teachers on comics prepared by themselves. The aim of this study is to analyze the opinions of social studies teacher candidates who have designed a comic book about social studies teaching with regard to comics and design and their use in social studies teaching.

3. Method

This research was is designed as phenomenological study which is a qualitative research designs to describe preservice social studies teachers' opinions on designing and using comic books in social studies teaching. Phenomenological studies are such research methodologies that allows to define all participants experiences are in depth study of an event or phenomenon (Creswell, 2007).

4. Participants

The participants consist of 56 people (26 females and 30 males) who continue their education in the 4th-grade social studies teaching during the 2018-2019 school year in a public university in Turkey. The participants are selected through purposive sampling, which is a type of non-random sampling. In Turkey, the period of study for pre-service social studies teachers in the Faculty of Education is 4 years or 8 semesters. The pre-service teachers who graduate after their 4-year education in teaching wait to be appointed at public schools by the Ministry of Education. In this study, the participants are the pre-service social studies teachers who are in their senior year. One of the reasons for selecting the pre-service social studies teachers in their senior year is the assumption that they are knowledgeable about preparing technology-assisted course materials as they have already taken courses (such as Teaching Technologies and Material Design, Computer Assisted Education, Computer Oriented Education, History of Middle Ages, and Special Teaching Methods) that would give them the background and skills required for this study. Moreover, thanks to their experience as interns in social studies courses in secondary schools as a requirement for the "Teaching Practice" course they take in their last year, it is posited that they are familiar with the skill level of secondary school students (ages 11 to 14), for whom the comic books they prepared were intended.

5. Data Collection

In this study, data were analyzed by using descriptive analysis technique within the scope of qualitative research method. The data obtained in descriptive analysis are summarized and interpreted according to previously determined themes (Yıldırım and Simşek, 2008).

In the study, to determine the prospective teachers who participated in the design of comic books 2 survey forms with open-ended questions are used as tools for collecting data. After reviewing the relevant literature and receiving expert who had Phd degree in the area of social studies education opinions, 2 survey forms with open-ended questions were prepared. In order to avoid complications, a preliminary survey was taken; experts were consulted for their opinion again, and the 2 survey forms with open-ended questions were given their final shape. The participants were given a 6-week training in preparing comic books in order to enhance their knowledge of preparing and using comic book panels in teaching. Before the process of preparing comic book panels started, the pre-service social studies teachers in their senior year were asked to answer the first questions in the first open-ended survey form. After they were trained in preparing comic books, they answered the open-ended questions in the second survey form. During the exercise, every participant was asked to prepare 10 panels using the free software (Pixton Comic Maker, 2018). As this program includes pre-made templates and characters, preservice teachers do not need to create a new character from scratch. The researchers then take and collect screenshots of

comic book panels prepared by pre-service teachers. Although the content of these panels has been analyzed, the analysis is not included here as it requires a separate paper.

6. Procedure

The process of preparing comic book panels which was realized with the efforts of 56 participants was completed over the course of 6 weeks (2 class hours each week). However, the participants were able to discuss the exercise with the researchers when they needed. At the end of the exercise, each participant prepared 10 panels.

The researchers have examined the comic book named "Marco Polo Silk Road" (Tabilio, 2017); and journeys of that the traveler from the Islamic world, İbn Battuta, who had been to the same routes as Marco Polo but had no comic books written on him, was selected as the main theme of the comic book panels to be prepared by the pre-service teachers. The inclusion of the excerpts from İbn Battuta's works in the 6th and 7th grades course books thanks to the updated social studies courses teaching programs was another reason contributing to the selection of the theme. İbn Battuta's name passes in the teaching sections of Culture and Heritage of the updated 6th grade social studies course book (Yılmaz *et al.*, 2018). As well as of the updated 7th grade social studies course book (Gültekin *et al.*, 2018). Therefore, special attention was given to have the panels prepared by the pre-service teachers geared towards the skill levels of 6th and 7th-grade secondary school students. After implementing the open-ended survey form as a preliminary test, the exercise continued as follows:

1st Week
- The researcher gave information to the participants on the goals and procedure of the study.
- 14 copies of the comic book "Marco Polo Silk Road" (Tabilio, 2017) brought to the class by the researcher were handed out to the participants to be read in groups. The content of the comic book under concern is discussed with the participants in a brief question and answer session. The participants were given the comic book Marco Polo Silk Road and asked to read it in rotating order until the next week.
- During this exercise, it has been explained that the theme of the product they are going to prepare using the Pixton Comic Maker (2018) will be Journeys in Anatolia, which is included in İbn Battuta's travelogue.

2nd Week
- The critical thoughts of the participants, who attended the class having read the comic book Marco Polo Silk Road, were received.
- The participants were informed about Marco Polo and İbn Battuta and encouraged to make a connection between the two travelers.

The participants were informed about "Rıhle" that is included in travel of İbn Battuta in order to allow them to use primary sources. The section containing journey in Anatolia in İbn Battuta's travel was reviewed and summarized by the researchers and handed out to the participants. The prepared summary was used to raise awareness on the subject among the pre-service teachers and lead them to access the electronic or printed copies of travel, which is a primary source.
- The comic book scripts, which were reviewed beforehand, were critically examined in order to learn about comic book scenarios.
- Furthermore, the participants were asked to write a simple script on İbn Battuta until the next week.

3rd Week
- The participants received feedback on the scripts they had prepared.
- İbn Battuta's Journey in Anatolia was reviewed in detail among the participants.
- Some sections of this travel book were read and discussed. Sample script writing exercises were carried out.
Participants were asked to start making their panels according to the feedback they had received.

4th Week
- Feedback was given on the scripts prepared by the participants.
- The participants expressed their opinions on using the software for creating panels.
- The participants were led to gain more experience with another scriptwriting exercise and further use of the Pixton program.

5th Week
- The participants received feedback on the comic book pages they have made by using the software in order to make the final corrections. The sample texts from İbn Battuta's travel and other relevant sections were read and a brainstorming exercise was carried out for improving their scripts.
- Using the sample panels, the feedback on script content and design was given.

6th Week
- The participants were asked to give the comic book panels they prepared their final shape and email them to researchers.
- The open-ended survey forms (6 questions) prepared by the researchers were delivered to the participants as the final test.
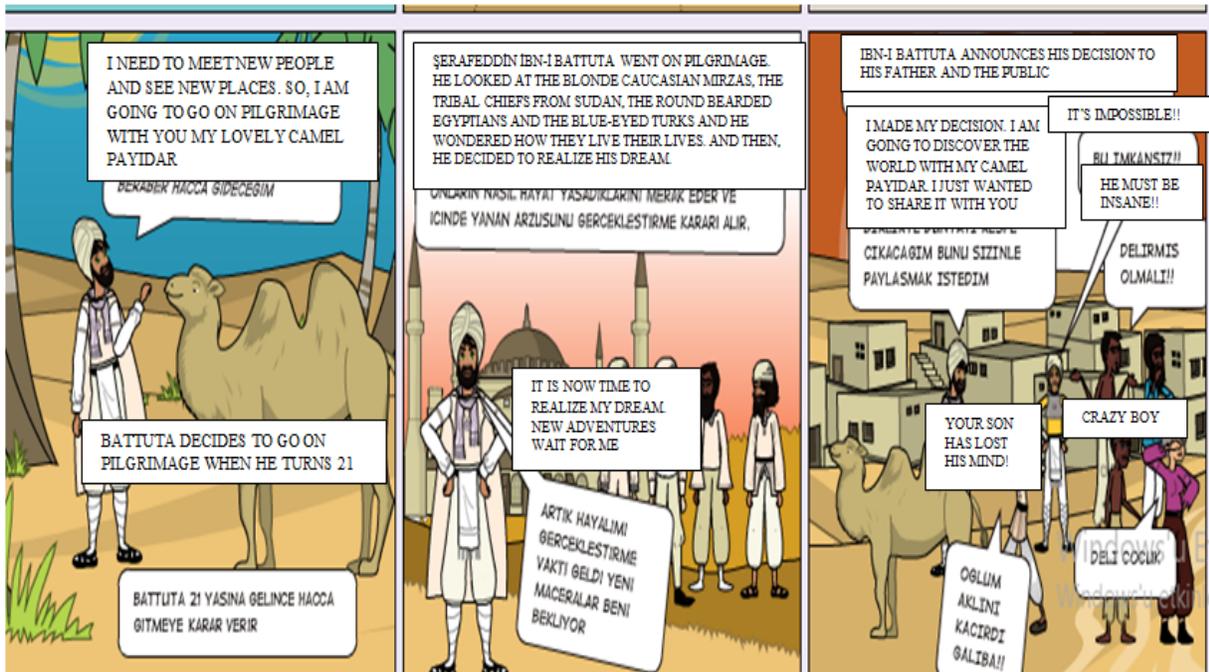
Figure-1. Examples of one comics panel.

Source: Prepared by preservice teacher participating in this study.

7. Data Analysis

In the study, the content analysis was carried out on the participants' responses to the open-ended survey forms. The coders examined the participants' long responses to the open-ended survey questions in detail and created themes by giving defining codes to the statements with the common meanings in the responses. The results of the frequency of statements in these categories are given in percentage. The students are given code names from S1 to S56. In order to ensure the reliability, the pre-service teachers' responses to the open-ended survey questions were coded by both of the researchers together. In this way, an agreement on the definition of codes was reached. Afterwards, the responses were independently coded by the researchers. After this operation, the themes that indicate unity and difference of opinions among the coders were identified. Then, the rate of reliability among the coders was determined. This rate is found by using (Miles and Huberman, 1994) reliability formula (Reliability Formula: Consensus/Consensus + Dissidence). Thus, the rate of reliability among the coders on pre-service teachers' responses to open-ended survey questions was found to be 0.95. This shows that coding are reliable. The direct quotations from the participants' responses are presented along with relevant categories in order to enhance the reliability of the study.

8. Results

The findings from the open-ended survey forms given to 56 pre-service teachers participating in the research before the exercise carried out in 6 weeks are shown in frequency and percentage distributions.

Table-1. Pre-service teachers' conditions of reading and working with comic books.

Condition	f	%
Reading comic books	37	66%
Not reading comic books	19	33.9%
Working with comic books	4	7.1%
Not working with comic books	52	92.8%
Total	56	100%

In view of the responses by the pre-service teachers from Table 1, it can be concluded that 37 people (66%) are reading comic books, whereas 19 people (33.9%) are not reading comic books. Among the pre-service teachers who stated that they read comic books, the comic books they noted in the survey forms are: Tommiks, Texas, Around the World in Eighty Days, Trip to the Moon, Batman, Spider Man, Iron Man, Abdülcanbaz, Corto Maltese, Death Note, Harry Potter, Infinity War, Karaoğlan, Malkoçoğlu, Persepolis, Red Kit, Robin Hood, Sin City, Sherlock Holmes, Tarkan, The Punisher, V for Vendetta. It is understood that the pre-service teachers are familiar with domestic and foreign comic books, and pre-service teachers who read comic books usually prefer similar styles of comic books.

Also, based on the pre-service teachers' responses, it is found that a great majority of them (37 people, 52%) have not been involved in preparing or using comic books in teaching. Therefore, it can be inferred that the pre-service teachers have not used comic books as the course material in any stage of their educational experience and they do not have experience in preparing comic books.

The reason why 4% of the participants have responded that they have experience in working with comic books is that they created educational panels using other computer software as a requirement for the "Computer Assisted Education" they have taken as an elected course in the Faculty of Education. At a point when 4th-grade pre-service social studies teachers are about to graduate from the teaching program, not having the experience in preparing comic books and using them as course materials is most certainly a shortcoming that needs to be amended.

Table-2. Pre-service teachers' perceptions of comic books.

Categories	f	%
Entertaining	19	33.9%
Characters with supernatural powers	6	10.7%
Creativity	6	10.7%
Combination of pictures and text	6	10.7%
Superheroes	4	7.1%
Cartoons	4	7.1%
Illustrated novel	3	5.3%
Speech bubble	2	3.5%
Adventure and action	2	3.5%
Encouraging reading	3	5.3%
Thought-provoking	2	3.5%
Interesting	3	5.3%
Hyperbolic story	1	1.7%
Total	56	100%

It is apparent from Table 2 the most frequently coded theme in the pre-service teachers' perceptions of the comic books is found to be "entertaining". This may be an outcome of the type of comic books enjoyed by the pre-service teachers. As stated above, it is found that the pre-service teachers do not read comic books for educational purposes or for using them as course materials, but rather read them usually for entertainment purposes.

After the pre-service teachers who joined the research had the experience of creating 10 panels and writing scenarios based on "İbn Battuta's Travel", their opinions on using comic books as effective course materials in teaching social studies in a conscious way were collected within the scope of other questions in the open-ended survey. From this point on in the study, the pre-service teachers' opinions after having the experience of making comic books are examined.

Table-3. Pre-service teachers' opinions after the practice of making comic books.

Categories	f	%
It was entertaining	31	55.3%
It made me happy	30	53.5%
It boosted my creativity	5	8.9%
It was difficult	5	8.9%
It was informative	5	8.9%
It was a waste of time	3	5.3%
It improved critical thinking	2	3.5%
Total	56	100%

The participants' responses to the question, "What are your opinions and feelings after designing a comic book?" are given below. For example; with regard to the theme entertaining S37 stated that *"After a very entertaining process of designing a comic book, I thought that I can use this material in the future and entertain students as well by engaging with appropriate subjects. I thought that I can introduce a very boring subject to students comfortably using comic books."*

Some of the social studies preservice teachers opinions about designed a comic book about İbn Battuta's Seyahatname", are given below:

S52; "Before starting the study, I was thinking that I would have had a difficult time, failed to decide on a scenario, and become unsuccessful. As I continued my study, I became satisfied with what I created. I felt a sense of achievement. I started to have the opinion that I have done a good job."

S10; "Using the characters and making them talk stimulated my imagination. It boosted my creativity."

S11; "This is a difficult method for a student."

S15; "It was a very fun exercise; it was entertaining and informative."

S5; "I don't see myself creating comic books. It takes too much time."

S56; "It made me think about *what I have created.*"

Based on the student opinions showed in Table 3 after the exercise, a majority of pre-service teachers had positive views on designing comic books in social studies teaching, while the rest of the participants had negative views on the subject. It is found that the pre-service teachers with positive views enjoyed being active and creating new products. On the other hand, the pre-service teachers with negative views are shown to be reluctant after the exercise due to the time-consuming nature of preparing comic books and the difficulty of creating a design.

The participants' opinions on designing comic books in teaching social studies and making their students design comic books are given below.

Table-4. Pre-service teachers' opinions on designing comic books in social studies teaching.

Categories	f	%
I'd like to design	43	76.7%
I'd not like to design	8	14.2%
I am indecisive	5	8.9%
Total	56	100%

Based on the pre-service teachers' opinions and upon examining Table 4 it can be seen that the pre-service teachers are eager to design comic books, and they aim to be active in their classes and make their classes entertaining and memorable. Some of them are identified to be more reluctant as they think designing comic books

is hard and complex. In addition, the indecisive participants show their lack of knowledge as a reason for their indecisiveness.

Examples from participants' opinions on designing comic books are shown below:

S32; "I think I can create designs. I think that I can even help the students learn more permanently using comic books."

S12; "I don't think that I can. Because it requires professional training. If it is not a high-quality comic book, then the information given to children would be lacking."

S12; "I am not fully sure. I need to learn more."

Table-5. Pre-service teachers' opinions on making their students design comic books in social studies teaching.

Categories	f	%
Would like to make students design	30	53.5%
Would like to make students design on particular subjects	20	35.7%
Would not like to make students design	6	10.7%
Total	56	100

According to Table 5 a number of pre-service teachers think that comic books would not be appropriate for every subject or they would bore students and would like to make students design comic books in particular subjects. Others prefer not making their students design comic books, because they think that designing comic books would be too difficult for students or students would be uninterested in designing them.

Some examples about participants' responses to the question "What are your thoughts on having the students actively design comic books in the social studies courses?" are given below:

S3; Whether it can be used for every subject is debatable. However, it would be beneficial to use them for particular subjects.

S22; They should not be prepared; they should be read more frequently. However, this can be offered as a course to the university students.

In order to determine what their thoughts and feelings regarding such a practice in the last general sense are, the question "Did you exercise you performed influence your view of comic books? was asked to preservice teachers. Based on the pre-service teachers' opinions, it can be concluded that the participants overcame their prejudices after designing comic books, became aware of the educational uses of comic books, and learned how to design a new product. Due to some pre-service teachers having a difficult time during the exercise, their views were affected negatively and their opinion that the exercise was not useful remained unchanged. Below some statements about this question are presented.

S5; It did influence. After creating a comic book, I decided that I can use this in my work life."

S6; I have always thought that making comic books is very difficult. Thanks to this exercise, I started thinking that individuals of all ages can write comic books. I also thought that I could use comic books as a course activity. This is a good educational application that can be practiced by both teachers and students."

S20; I didn't enjoy it much because I found it difficult. So, it did not have a positive influence on me.

After the exercise, the pre-service teachers' preferred subject matters in which they would like to use comic books in the social studies teaching are given below. The pre-service social studies teachers' responses to the question are as follows:
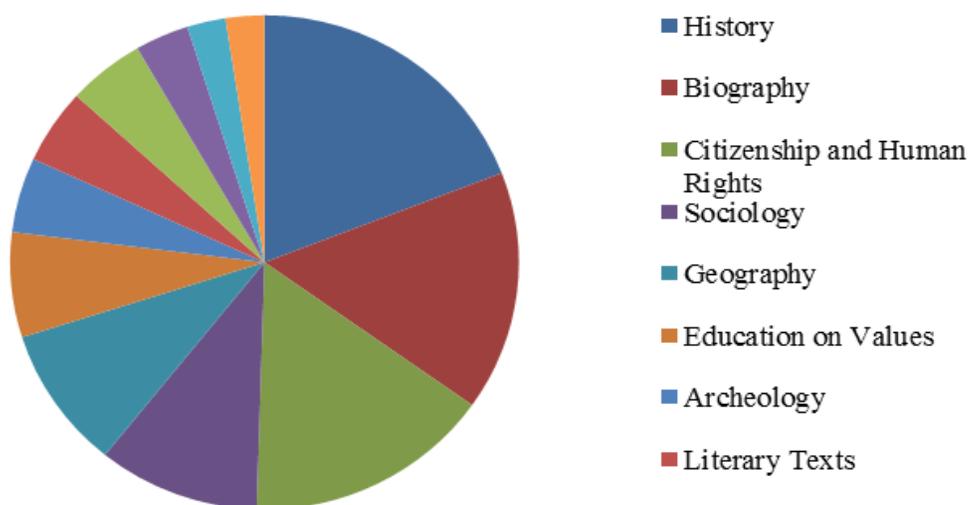

Figure-2. The subject matters in which the pre-service teachers would like to create comic books in social studies teaching.

Based on Figure 2 and the opinions of the pre-service teachers, it is found that they would like to design comic books in certain subjects. It is found that the pre-service teachers draw connections between other sciences that are subfields of social studies and make use of interdisciplinary connections. It is also found that pre-service teachers learn more about verbal subjects less towards quantitative subjects. It can be seen that the pre-service teachers prefer history in which they would like to design comic books the most.

The preservice teachers asked whether they recommend use of comic books in social studies courses to other teachers. Their answers are summarized in Table 6.

Table-6. Frequency and percentage distribution of pre-service teachers according to their recommendation of using comic books in social studies courses.

Condition	f	%
Recommending	51	91%
Not recommending	5	8.9%
Total	56	100%

The results indicate that great majority of teacher candidates recommend the use of comic books. The statements below illustrate some of their views.

S5; Yes, I'd recommend it. The students are usually bored with social studies courses. Reading comic books might improve their reading habits and increase class participation.

S4; I recommend it. Because in constructive education, as the student thinks more and is at the center so the education is effective.

S12; No. It is more suitable at a high school level.

S20; I would not. It is too challenging.

Considering the pre-service teachers' opinions given in Table 6, it is found that most of them realized the importance of using comic books as an educational tool in the social studies teaching and recommended using comic books. Based on this finding, it can be argued that the pre-service teachers were made cognizant of the significance of using comic books in the social studies teaching and had the necessary awareness. Only a small percentage of the participants continue to have their negative views, and they find the comic book designing phase particularly challenging.

9. Discussion

The research aimed at examining the 4th-grade pre-service social studies teachers' opinions on preparing and using comic books in the social studies teaching. According to the results of the research, a great majority of 56 pre-service teachers read comic books before. Some of the pre-service teachers who did not read comic books before still show an interest in comic books as they have skimmed through comic books before. However, in a study done by Aktekin and Pata (2013) it was reported that the most of the secondary school students (%59.7) who participated in the study never read comic books, 28.3% of students read comic books in a middling frequency, whereas 12% of students read comic books frequently. The source of their interest of preservice teachers in comic books might be the high amount of pictures, low amount of text, colorfulness, and entertaining character of comic books. This situation has been determined by Unal and Demirkaya (2019) as well in a study they conducted with participation of 5th grade middle school students.

Before the exercise, the overall opinion of the pre-service social studies teachers on comic books was that they find comic books entertaining. Before the exercise, participants did not express any opinions on the educational aspects of comic books. Thus, it can be concluded that before the exercise, the pre-service teachers perceived comic books as entertaining leisure activities rather than the educational materials. On the other hand, the participants' lack of experience in preparing and using comic books in their educational lives in the past might have been a reason for their limited knowledge on the instructive aspects of the comic books and for their emphasis on their entertaining aspects. After the exercise, it is seen that the participants were more focused on the educational aspects of comic books on the social studies teaching, and gained awareness of using comic books as visual teaching materials. In view of the pre-service teachers' perceptions of designing comic books and making their students design comic books after the exercise, it can be suggested that the majority had a positive view on designing and making their students design them in the future. Thus, the view favoring the use of educational comic books in the social studies teaching was dominant. The reason for the favorable opinions of the pre-service teachers might be their grasp of the significance of the instructive value of comic books. It was seen that teacher candidates tried to express that they were aware of their educational value despite the difficulties they faced in using comics. as reported by McGrail et al. (2018).

The pre-service teachers with negative views might express their dissatisfaction with the exercise due to the difficulties they had performing it. The reason for some pre-service teachers' negative or indecisive views on designing comic books might be insufficient knowledge or practice. These shortcomings can be amended through the project tasks assigned in technology-oriented courses they take in their faculties. It is clear that the pre-service teachers had some concerns regarding comic book design. Some of the participants remarked, "It takes too much time and it is difficult". Therefore, extending the period of training for comic book preparation and letting students gain further experience might alleviate these concerns. Also, the pre-service teachers had concerns about whether the informational content of comic books they prepare would be suitable for secondary school students. A study by Uygun et al. (2016) also reports that the pre-service social studies teachers had concerns regarding the failure of effectively passing their knowledge to students.

The pre-service teachers preferred preparing comic books in subjects connected with the social studies, and especially in history. This might be due to the strong link between the subjects of history and actual life, and the ease of transferring historical events from different sources into a scenario (Ilhan and Oruç, 2019). In addition, currently available comic books focused on history and the historical content of the exercise they performed for this study might have influenced the opinions of the pre-service teachers. Since there were not many comic books in other subjects that could constitute an example, and they did not know how to translate other subjects into their scenarios, these subjects were not very influential on the choices of pre-service teachers.

Since most of the pre-service teachers recommended using comic books in the social studies teaching, it can be concluded that the pre-service teachers have a positive view on using comic books in teaching and have an understanding of the importance of using comic books in teaching. However, since some participants did not

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recommend the use of comic books in social studies, it can be suggested that the awareness in using comic books in education has not yet reached maturity. Ilhan (2016) reported that the students who did not have any experience with the comic books approached the comic books with prejudice, but at the end of the study, their perspective changed in a positive direction. Muzumdar (2016) in a study which used comic books as additional materials and focused on the students of Faculty of Pharmacy, found that the students have positive views of using comic books and comic books helped the students understand the course subjects better. At the end of his research, Yıldırım (2016) found that the pre-service class teachers had positive views on educational comic books. Furthermore, the findings of the studies on the use of comic books among social studies students at secondary school level (Topkaya and Simşek, 2015; Ilhan, 2016; Topkaya, 2016) and the results of this study, which focused on the pre-service social studies teachers, are parallel and support each other.

This study has some limitations. An obvious limitation of this study is that it adopts a case study approach, and thus the findings may not be generalizable. The second limitation of this case study is that it could have been designed to focus on the subjects of other disciplines rather than choosing the discipline of history and specific agencies/actors as its main subject matter. Furthermore, participants are asked to create comic book panels only on a specific subject, since creating a comic book, writing a script and identifying the appropriate pictures for that script, and transferring them to comic book strips are time-consuming. Participants, in groups, could have prepared different studies focusing on different subject matters. This way, it would have been possible to assess the effects of the comic books prepared by participants on academic achievement.

10. Conclusion

As a conclusion, it is found that the fourth-grade pre-service social studies teachers have positive views on preparing and using comic books in the social studies teaching. When the content of the panels prepared by the participants was examined, it was observed that they wrote understandable dialogs, had relatively accurate usage of chronological information and paid attention to the match between the subject and the chosen characters and settings. Although there were weekly briefings on the subject, when the scenarios of the completed panels were examined in detail, it was recognized that there were problems in the use of historical language and concepts, and in establishing the historical relevance. Despite these shortcomings, it is clear that the pre-service social studies teachers who performed the exercise gained awareness of the effective use of comic books in easing making connections between subjects or making subjects concrete in the social studies teaching. Furthermore, it is suggested that designing comic books not only in the subjects of all disciplines related to the social studies but also in the contemporary subjects can be beneficial for making the pre-service social studies teachers active and increasing their creativity.

In the training of the social studies teachers, it is necessary to offer course options on specific subjects focused on making different course materials that are more suitable for technology-assisted innovative classrooms. One of these courses should be making comic books, which would be oriented towards creating technology assisted products. Comic books can be used in the social studies teaching in order to ease making connections between subjects or to make some subjects more concrete, and for improving students' reading and writing skills in social studies courses. It can also be suggested that assigning projects on contemporary subjects can be beneficial for making pre-service social studies teachers more active and for enhancing their creativity. Although there are comic books in the field of history focused on the lives of sultans, there is a need for publishing comic books on social and economic subjects and on the subjects of interest of other disciplines.

Future research can look into how teachers make sense of the designed lessons with comics in social studies teaching. Further studies with extended observations and interviews can focus on in-service teachers' circumstances/desires to have training on preparing comic books or similar visual materials, whether they have experience in preparing comic books, and whether they use comic books in social studies courses. Furthermore, it could be worthwhile to study the effects of the comic book preparation activities in different subject matters carried out by secondary school students on students' academic success, their attitudes towards and motivation for social studies courses.

In sum, with this study, it is possible to make a proposal to the decision makers to rearrange and enhance the pedagogical skill sets of pre-service and in-service social studies teachers required for preparing technology-assisted teaching materials. Again, creating an environment where pre-service and in-service social studies teachers could prepare sample comic book panels in collaboration with each other could be the right step towards the effective use of technology. It is recommended for other researchers to examine the writings inside the square or the circular speech bubbles in the comic book panels prepared by students, prospective teachers, and in-service teachers, in order to assess participants' skills in literacy. In this study, the usability of the material was emphasized rather than content. In future studies, the content of the script can be examined in terms of disciplinary literacy.

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