

A Study on the Use of Creative Comics and Cartoons in a Social Studies Course: A Mixed Methods Research Design

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ABSTRACT

The study investigates the impact of engaging creative comics and cartoons in social studies courses on the students' academic achievement and identifies the students' views in this regard. In accordance with the purpose of the study, the embedded design—one of the mixed methods research designs—was employed. The study sample consisted of 91 students in three different classrooms studying in the 5th grade of a secondary school affiliated with the Directorate of National Education in Erzurum, Türkiye, in the 2022/23 academic year. The academic achievement test developed by the researcher was used to reveal the impact of materials consisting of creative comics and cartoons on students' academic achievement. In addition to that, a focus group interview was conducted with the students in the experimental groups to reveal their views about the use of creative comics and cartoons. The quantitative data were analysed with SPSS 26.0 software, whereas the qualitative data were analysed with content analysis. The results of the study showed a statistical significance in favour of the experimental groups with respect to the average scores in the post-test, while there was no such statistical significance between the experimental groups in which either creative comics or cartoons were used. All the other data considered together suggested that the students who participated in the focus group interview liked the given materials and expressed positive views.

Keywords: Academic achievement, cartoons, creative comics, social studies, student views

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INTRODUCTION

Determining the appropriate course content and including it in the school curriculum has become a significantly challenging task in today's information-intensive world. In a world with too many events and too much information, students' efforts to access the very information that is meaningful and important for society and themselves

may end up confusing. Nowadays, the teaching content no longer consists of mere information, as in encyclopaedias. However, it contributes to students' ability to interpret, relate to and decide what is meaningful in all kinds of real-life situations (Köksal, 2019). In order to improve communication in the learning process and to create an educationally rich environment, tools, equipment, and materials have been widely utilised. Well-designed teaching materials improve communication, enrich the teaching process, and ensure effective and permanent learning (Dirik, 2015). Moreover, the level of students' recall of what they have learnt, the number of senses used, and their active experiences increase depending on the materials used in the lesson (Tan, 2019). Teaching methods, materials and activities appropriate to the intended learning outcomes (ILOs), course content and student level can be used in classrooms where effective teaching is targeted. Two such teaching materials are creative comics and cartoons.

Creative comics represent a harmonious combination of creative writing and comics (M. Şentürk, 2022). David Kunzle (1973) defined comics as a series of separate images that tell a moral and contemporary story in a mass environment, reflecting the superiority of image over text, and creative writing as the transcription of information collected as a result of observations in different ways from other people. Students tend to express their creative thoughts through genres such as fairy tales, poems, and cartoons (Kaya, 2013).

With the use of creative writing and comics, it can be ensured that students acquire ILOs, permanent learning is achieved, and students' academic achievement increases (Chamisijatin et al., 2020; Çetinkaya, 2015; Göçen, 2018; Hermita et al., 2020; İlhan & Oruç, 2019; Maryani & Amalia, 2018; Lin & Lin, 2016; Özdemir & Çevik, 2018; Suryatin & Sugiman, 2019; Ö. Ç. Şentürk, 2020; Tok et al., 2014; Topkaya, 2016) that their attitudes are positively affected (Arı et al., 2019; Babayigit, 2019; Göçen, 2018; Gürsoy & Göçer, 2021; Kırmızı & Beydemir, 2012; Orçan, 2013; Topkaya & Şimşek, 2015; Veyis & Kolikpınar, 2021), and that students can learn at their own pace (M. Şentürk & Şimşek, 2022). Research also shows that comics improve students' creative thinking and learning abilities (Putra & Iqbal, 2014) and that creative comics enrich the learning environment (Senturk & Senturk, 2023). The use of creative writing and comics in the teaching process (Çetinkaya, 2015; Matuk et al., 2021; Selong et al., 2021) has been shown to exert many positive effects. What also draws attention among humour tools are cartoons, which serve positive purposes and are used as learning materials. A humorous picture or depiction of some aspects of an event, person or thing exaggerated and made ridiculous is called a caricature (Oruç, 2006). In other words, caricatures are works of art that distort or exaggerate the characteristics of a person or a group of people to create an easily identifiable visual resemblance (Kleeman, 2006).

Being divided into three categories in terms of reflecting philosophical problems,

containing nonverbal humour and criticising the social structure of society, cartoons (Kazanevsky, 2005) are highly likely to contribute to students when used as teaching materials. Research has shown that the use of cartoons increases students' academic achievement (Akbaş & Toros, 2016; Akengin & İbrahimoglu, 2010; Alkan, 2010; Çakır & Aydoğdu, 2016; Durmaz, 2007; Et & Dilber, 2022; Güngör, 2018; Koçoğlu, 2016; Özşahin, 2009; Tokcan & Alkan, 2013; Topcubaşı & Polat, 2014), positively affects students' attitude (Akkaya, 2011; Koçoğlu, 2016), improves their imagination (Kleeman, 2006), makes lessons fun, provides better learning (Akbaş & Toros, 2016; Çiçek, 2011; Özşahin, 2009), improves students' problem-solving skills (Göksu & Köksal, 2016), attracts students' attention as an effective motivational tool (Akbaş & Toros, 2016; Barut & Akbaba, 2017; Durmaz, 2007; Kleeman, 2006). Research also reveals that cartoons and comics have many benefits, and creative comics are still very new in the field. Besides, unlike other studies, no study has been found in which creative comics were examined together with cartoons. In this context, this study is expected to contribute to the related literature as the first study in which cartoon and creative comics materials are compared.

This study aims to investigate the effect of using cartoons and creative comics in a social studies course on students' academic achievement and to reveal students' views about such materials. Therefore, the

problem statement of this study is “Does the use of creative comics and cartoons for the instruction of the 5th Grade Social Studies course unit, ‘Science, Technology and Society,’ impact students’ academic achievement?”

For this purpose, answers were sought to the following sub-problem statements:

1. Does the use of cartoons and creative comics as learning materials in a social studies course significantly impact students' academic achievement?
2. Is there a statistical significance in the mean academic achievement scores obtained in the course unit, “Science, Technology and Society,” by the sample groups of students for whom creative comics and cartoons were used?
3. What are the students' views on the use of cartoons and creative comics in the social studies course?

Study Limitations

The study was limited to 91 5th-grade students studying in a school affiliated with the Ministry of National Education in the Palandöken District of Erzurum Province in the 2022–2023 academic year, the learning area of “Science, Technology and Society,” and 16 experimental group students who participated in the focus group interview. The study is limited to the academic achievement test, interview questions, materials prepared by the researcher and the findings obtained as a result of applying these materials.

METHODS

This study employed the embedded mixed methods design, in which qualitative and quantitative data were brought together, and the data obtained were analysed. The person conducting the study can add a qualitative part to a quantitative part, such as an experimental study, or a quantitative part to a qualitative part, such as a case study. A supporting phase is added to the study to develop the general design (Creswell & Clark, 2011/2018). When the data collected from the qualitative section are considered supporting elements, the qualitative section is embedded in the quantitative section (Creswell et al., 2009).

The quantitative part of the study included a quasi-experimental design with pre-test and post-test control groups. In this model, which is widely used in education-related research, the researcher uses the existing groups since it is not possible to randomly assign students (McMillan & Schumacher, 2014). This design is composed of unbiased control and experimental groups. Measurements are made in sample groups before and after the experiment under equal conditions (Karasar, 2017).

Study Sample

The study sample in the experimental part was conducted with 91 5th grade students studying in three different classrooms of a secondary school affiliated with the Ministry of National Education in Erzurum, Türkiye, in the 2022/23 academic year. Two classrooms were designated as the experimental group and one class as the

control group (CG). For the purpose of teaching the content in the course unit, “Science, Technology and Society,” one group (n=31) was instructed with creative comics, whereas the other one was instructed with cartoons (n=31); the control group (n=30) was instructed with the current curriculum. The convenience sampling method, which aims to prevent loss of time and labour force (Büyüköztürk et al., 2014), was used to choose the schools in the study.

The qualitative part of the study involved focus group interviews with 16 students from the experimental groups with creative comics as a learning material and 16 other students with whom cartoons were used for a similar purpose. Maximum variation sampling was used to identify the students for the focus group interview. This sampling method examines it in detail to reveal similar and different aspects of various situations involving the research problem (Bilici, 2019).

Data Collection Tools

In the experimental part of the study, the “Science, Technology and Society Academic Achievement Test” developed by the researcher was used as a data collection tool. In contrast, in the qualitative dimension, a focus group interview was conducted to collect ideas from the students in the experimental groups.

Science, Technology and Society Academic Achievement Test

The “Science, Technology and Society Academic Achievement Test” was prepared

by the researcher to investigate the impact of the use of cartoons and creative comics in the social studies course on students' academic achievement and to reveal students' views on these activities. While preparing for the academic achievement test, the ILOs in the 5th grade course unit, "Science, Technology and Society," were considered. The cognitive levels of the questions in Bloom's taxonomy were determined after the opinions of three academic field experts were taken, upon which the appropriate specification table was prepared.

The 30-question academic achievement test prepared for the course unit "Science, Technology and Society" was administered to 88 6th grade students who had previously studied this subject and were deemed to have sufficient knowledge of the said unit. Each student in the pilot activity was asked to answer all questions to avoid data loss. The data collected after the pilot activity were analysed using the Test Analysis Program (TAP), and the item difficulty index, item discrimination index, and KR-20 reliability coefficient of the test were calculated.

Focus Group Interviews

Following the instruction through creative comics and cartoons in the experimental groups, a focus group interview was conducted with the interview questions prepared by the researcher to collect the students' views about the relevant activities. Some situations that may not come to mind in individual interviews may come to mind in group interviews within the framework of other individuals'

explanations, and additional comments may be made. In addition, if it is thought that the data to be collected will be richer, it is useful to conduct a focus group interview (Yıldırım & Şimşek, 2016). In this context, conducting focus group interviews in this study was found appropriate. The focus group interview, which constitutes the qualitative dimension of the study, can be defined as a carefully planned discussion in an environment where individuals can freely express their ideas (Krueger, 1994). The researcher asked four questions to the students instructed through creative comics and those instructed with cartoons about the related activities and collected the students' views. During the interviews, a voice recorder was placed on both sides of the table where the students in the group were sitting to prevent data loss.

It may be difficult for the researcher to take notes in focus group interviews and manage the discussion simultaneously. It is, therefore, considered useful to have a backup voice recorder to fully record the sounds in the environment (Glesne, 1992/2015). The questions used in the interviews were examined by three field experts, after which they were piloted with two students. Following the post-test for academic achievement, the interviews with 16 students lasted approximately one hour. In pilot studies for focus group interviews, according to Yıldırım and Şimşek (2016), researchers have the opportunity to try out the environment where the study will be conducted as well as the materials such as recording devices. The pilot activity

conducted for this study is of significant importance in terms of validity and reliability.

Process and Execution

The ethics committee permission required for the study was obtained from the Social and Human Sciences Ethics Committee at Atatürk University. Before conducting the activities in the study, creative comics and cartoon materials were prepared according to the ILOs of the current social studies curriculum. The researcher prepared all the learning materials using the website named “Storyboard That.” Next, the social studies teacher working at the school where the study would be carried out was informed about the relevant materials. The sample groups were randomly selected from the classes available in the school; the experimental and control groups were administered pre-tests before initiating the course unit. Before the learning materials were used in the experimental groups, the students were informed about them.

With the start of the instruction in the pre-determined course unit, the lessons were taught with creative comics in relation to each ILO in one group and with cartoons in the other. The control group, however, was instructed with the current curriculum. All participants were finally administered the academic achievement post-tests. In this context, the quantitative process of the study is shown in Figure 1.

Following the activities and the post-tests, a focus group interview was conducted with 16 students selected from the groups. After the data collection, quantitative and qualitative sections were analysed, and the results are presented in the Results section.

Data Analysis

The data obtained for the quantitative part of this study were analysed using SPSS 26.0 software. A normality test was performed to control the data distribution and compare the academic achievement tests of the students in the study sample. Generally speaking,

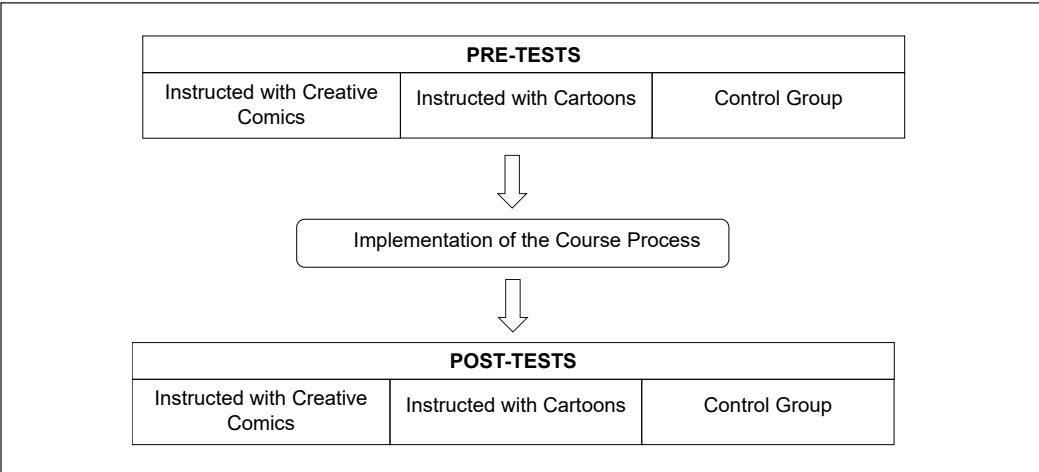


Figure 1. Quantitative process of the study

the Kolmogorov-Smirnov normality test is recommended for normality values when n is 30 and above (Ak, 2008). In terms of skewness and kurtosis, the values of the data were between +1.5 and -1.5 and comply with normal distribution values (Tabachnick & Fidell, 2015). The statistical significance level was determined as 0.05.

In the qualitative part of the study, a focus group interview was conducted with 16 participants, and the data collected was evaluated through content analysis. In this context, the data collected by the researcher were read several times and saved on the computer. Gathering similar data around certain concepts and themes (categories) and organising and interpreting these data in a way that can be understood is called content analysis (Yıldırım & Şimşek, 2016). Both interviews lasted 1 hour, two voice recorders were used to prevent data loss, and the data obtained were transcribed after the interview. They were then read several times, coded and categorised under appropriate headings. Taking voice recordings in focus group interviews, keeping the necessary notes for the accuracy of the data, and giving the data received from the participants as they are without any additions increase the reliability. In this context, attention was paid to these issues, and participant approval was obtained to increase the reliability of the study (Büyüköztürk et al., 2014).

The participants were given names from S1 to S16 to support the tabulated data by direct student views. When the students expressed more than one view, they were taken into consideration numerically, not by

considering the number of students, to show the frequencies for the questions.

RESULTS

The academic achievement test, used as a data collection tool, was administered to the control and experimental groups as a pre-test and post-test.

Pre-test Results on the Impact of Using Creative Comics and Cartoons on Students' Academic Achievement

The participants were administered an academic achievement pre-test related to the "Science, Technology and Society" course unit to reveal the impact of using cartoons and creative comics in social studies courses on students' academic achievement. A one-way ANOVA test was conducted to reveal whether there was a difference in terms of pre-test scores between the groups. Before the ANOVA test, the descriptive statistical values of the groups should be stated.

Table 1
Descriptive values based on science, technology and society academic achievement pre-test results

Groups	n	\bar{X}	SD
Instructed with creative comics	31	47.258	21.673
Instructed with cartoons	30	59.166	21.857
Control group	30	50.833	22.783

The One-way ANOVA test was used to determine whether there was any statistical significance between the average scores provided in Table 1 and the results shown in Table 2.

Table 2 shows the one-way ANOVA test results, which indicate no statistical significance between the mean academic achievement scores of the groups ($F_{(2,88)}=2.319, p=0.104, p>0.05$). The academic achievement values between the groups seemed close to each other before the activities.

Post-test Results on the Impact of Using Creative Comics and Cartoons on Students’ Academic Achievement

The teaching process based on creative comics and cartoons was completed in the experimental groups, and the teaching process based on the current curriculum was finalised in the control group. Afterwards, the “Science, Technology and Society” academic

achievement test was administered as a post-test to reveal whether the groups presented any difference in post-test scores. The whole process consisted of six weeks, with the pre-test and post-test. A one-way ANOVA test was used to determine any difference between the experimental and control groups in terms of post-test scores. Before the ANOVA test, the descriptive statistics values of the groups should be specified.

Table 4 shows the results of the One-way ANOVA test used to determine whether there was a statistically significant difference between the average scores of the groups, as presented in Table 3.

As can be seen in the one-way ANOVA test results in Table 4, there was a significant difference between the mean academic

Table 2
Science, technology and society academic achievement pre-test ANOVA results

Groups	Sum of Squares	SD	Mean of Squares	F	p
Inter-groups	2266.764	2	1133.382	2.319	0.104
Intra-groups	43000.269	88	488.639		
Total	45267.033	90			

Table 3
Descriptive values according to science, technology and society academic achievement post-test results

Groups	n	\bar{X}	SD
Instructed with creative comics	31	74.354	16.316
Instructed with cartoons	30	75.500	15.105
Control group	30	62.166	16.799

Table 4
Science, technology and society academic achievement post-test ANOVA results

Groups	Sum of squares	SD	Mean of squares	F	p
Inter-groups	3289.808	2	1644.904	6.352	0.003
Intra-groups	22788.763	88	258.963		
Total	26078.571	90			

achievement scores of the groups ($F_{(2, 98)} = 6.352, p = 0.003, p < 0.05$). Post-Hoc Tukey's test was performed to identify in favour of which group the difference existed, considering the groups instructed with creative comics, those instructed with cartoons, and the control group. The results are given in Table 5.

As shown in Table 5, there is a significant difference between the academic achievement post-test group scores (creative comics ($\bar{X} = 74.354$), cartoons ($\bar{X} = 75.500$), CG ($\bar{X} = 62.166$)). A significant difference was found in favour of those instructed with creative comics and cartoons compared to the control group, with no significant difference between the creative comics and cartoons. The results of the one-way ANOVA test determine whether the means compared are significantly different, though no information about the magnitude of this difference is provided. Therefore, the effect size value should be known together with the statistical significance. The eta-squared (η^2) in one-way ANOVA is an association module defined as effect size (Can, 2017).

The effect size value (eta-squared) of this study was calculated as $\eta^2 = 0.13$. The

eta-squared (η^2) values can be interpreted as small = 0.01, medium = 0.06 and large = 0.14 effect sizes (Green & Salkind, 2005). The eta-squared (η^2) value has a medium effect size in this study.

Results Regarding Student Views on Creative Comics and Cartoons

Qualitative data were collected through interviews with 16 students, eight of whom were instructed with creative comics and eight with cartoons. The data were subjected to content analysis, presented in tables and supported by direct quotations from student views. Table 6 illustrates the interview questions and the theme represented.

Results of the Focus Group Interviews on Creative Comics

Benefits of Using Creative Comics

In the first question, the students were asked whether the use of creative comics in the social studies course contributed to their learning. All participants stated that the use of creative comics contributed to their learning, as shown in Table 7.

As seen in Table 7, seven of the participants stated that their imagination

Table 5
Science, technology and society academic achievement post-test Tukey's test results

Groups	Groups Compared	Difference Between Means	Standard Error	p
Instructed with creative comics	Instructed with cartoons	-1.145	4.121	0.958
	CG	12.188*	4.121	0.011
Instructed with cartoons	Instructed with creative comics	1.145	4.121	0.958
	CG	13.333*	4.155	0.005
Control group	Instructed with creative comics	-12.188*	4.121	0.011
	Instructed with cartoons	-13.333*	4.155	0.005

Table 6
Interview questions and themes

Interview Questions	Themes
1) Are there any benefits of using creative comics in a social studies course? If yes, what are they?	- Benefits of creative comics
2) Are there any benefits of using cartoons in a social studies course? If yes, what are they?	- Benefits of cartoons
3) Are there any negative aspects of using creative comics in a social studies course? If yes, what are they?	- Negative aspects of creative comics - Negative aspects of cartoons
4) Does the use of creative comics in a social studies course impact students' academic achievement?	- The impact of using creative comics on academic achievement
5) Does the use of cartoons in a social studies course impact students' academic achievement?	- The impact of using cartoons on academic achievement
6) Does the use of creative comics in a social studies course impact students' attitudes?	- The impact of using creative comics on students' attitude
7) Does the use of cartoons in a social studies course impact students' attitudes?	- The impact of using cartoons on students' attitude

Table 7
Benefits of using creative comics

Expressions	f
Develops students' imagination	7
Enables a better understanding of the course content	5
Improves students' writing habits	2
Enables students to test themselves	1
Allows students to generate ideas	1
Enriches the course with visuals	1

improved due to creative comics, and five stated that the course content was much better understood by such activities. S2 said,

“I think they help us develop our imagination and make us understand the content better. For example, there were very good activities about science and media literacy... I learnt things I had not learnt before. I realised that my imagination developed faster. There were more positive things about them.”

S3 said, *“They helped us understand the subject matter better and realise whether or not we understood it, as well as developing our imagination”*. S7 said,

“It improved my comprehension. It helped me understand the lesson better when shown with colours and visuals... It also helped me understand and develop more; it improved my imagination too. It is already difficult for me to understand without visuals. It is better this way.”

S8 said, *“It taught me things I never knew, gave me the habit of writing, and improved my imagination.”*

Negative Aspects of Creative Comics
In the second question, the students were asked whether there was a negative aspect of using creative comics in social studies courses. No participants mentioned a negative aspect of using creative comics in

the social studies course but rather stressed the positive effects. For this reason, no table was made regarding this question and the statements of the students were directly presented: S3 said, “*I do not think so. I think they all have positive effects.*” S6 said, “*I do not think there are negative aspects either.*” S8 said, “*I do not think there are any negative aspects either; in fact, there are many positive aspects.*”

The Impact of Creative Comics on Academic Achievement

In the third question, the students were asked how the use of creative comics in the social studies course affected their academic achievement. All participants stated that the use of creative comics in the social studies course positively affected their academic achievement.

As seen in Table 8, five participants pointed out that the subjects were better-understood thanks to the activities, and four of them stated that they participated more in

the lesson when creative comics were used. Regarding this issue, S2 said, “*It affected my academic achievement positively. I knew some subjects before but did not know them so well, so thanks to the activity, I started to know them better. It was funny and good, I liked it a lot*”. Moreover, S4 referred to increased self-confidence, saying, “*It improved my academic achievement. Before that, I could not answer such questions, I was afraid that I would make a mistake, but now I can raise my hand to every question*”. With an emphasis on a developed habit of writing and thinking, S6 said, “*It contributed a lot to us. I learnt to write and think; for example, we had the chance to write. Now I can raise my hand more*”. S8 pointed to the lessons becoming fun and said, “*It affected my participation in the lesson and added fun to the lesson. Therefore, it affected me positively*”.

The Impact of Creative Comics on Students’ Attitudes

In the fourth question, students were asked how the use of creative comics affected their attitude towards the social studies course. The analysis of the results revealed that all participants stated in the interview that the use of creative comics positively affected their attitudes.

As shown in Table 9, four participants stated that their interest and curiosity towards the lesson increased, and two students said they enjoyed the activities. Two others indicated that the activities made them like the lesson, and the other two emphasised that the activities saved the

Table 8
The impact of creative comics on academic achievement

Expressions	f
Enables a better understanding of the course content	5
Increases participation in the lesson	4
Causes appreciation of the activities	1
Increases self-confidence of students	1
Enables students to gain the habit of writing and thinking	1
Enriches the course with visuals	1
Makes the lessons fun	1
Provides an easier understanding of the course	1

Table 9
The impact of creative comics on students' attitude

Expressions	f
Increases interest and curiosity about the course	4
Provides enjoyable materials for students	2
Allows students to enjoy the lesson	2
Saves the lesson from boredom	2

lesson from boredom. Regarding this, S2 stated that the use of creative comics had many benefits, adding, *“It contributed to me a lot, it was very funny and enjoyable. I liked it very much. It affected my attitude positively”*, and S7 said,

“I used to get bored when I could not find the questions, and I was upset when I got them wrong, but now, I do not have such feelings. I felt happy, I attended more, and now I do not think the way I did before.”

S3 pointed out the increased interest and curiosity towards the lesson and said, *“The experience was very positive. I liked the lesson more, and my curiosity increased”*. S6 emphasised that he liked the lesson more and said, *“I had a lot of fun; it was very positive for me. My love for the lesson increased.”*

Focus Group Interview Results on Cartoons

Benefits of Cartoons

When asked whether the use of cartoons in the social studies course contributed, all participants indicated that it made a great contribution, as provided in Table 10.

Table 10
Benefits of cartoons

Expressions	f
Allows a better understanding of the course content	6
Helps visualise the course content	5
Makes the lessons fun	1
Saves the lessons from boredom	1
Provides an easier understanding of the course	1
Draws students' attention	1
Enables students to focus	1

As shown in Table 10, six students stated that the content was better understood thanks to cartoons, while five stated that cartoons helped visualise the lessons. Regarding this issue, S9 said, *“Yes. It helped us to reinforce and understand the lesson better and to take better examples from the visuals.”* S10 and S13, respectively said,

“Yes. I think we learnt by having fun; we reinforced what we learned better. It made a greater contribution to us. For example, students can get bored in a normal lesson, but we did not when there were cartoon materials. Not only the students, but also the teacher; everyone had fun.”

“It helped us to grasp the content, so the lessons were more effective with visuals. For example, we reinforced the subject matter. Sometimes, some may be distracted, but since you explained it well with cartoons, everyone focused on the subject and made an effort to reinforce their knowledge of it.”

S14 said, “Normally, we only read the text in the social studies lesson, but we ended up understanding better with the cartoons. It visualised and attracted my attention, and I understood better.” Views included those stressing that the lessons were more entertaining and visual and that the content was better understood, with the lessons becoming less boring with cartoons.

Negative Aspects of Cartoons

In the second question, the students were asked whether there was a negative aspect of using cartoons in social studies lessons. All participants in the focus group interview stated that there was no negative aspect of using cartoons in the social studies course, so no table was made for this question. When it comes to relevant student views, S12 said, “I think there was nothing negative because when I read the cartoons, I understood better with examples. I also had fun. It was nicer that way”. S15 said, “I do not think there was any negativity.” S16 said, “I think it was a very nice activity. For example, when someone did not understand something, we reviewed it with cartoons, and everyone understood it.”

The Impact of Cartoons on Academic Achievement

In the third question, the students were asked about the impact of the use of cartoons in the social studies course on academic achievement. They responded that the use of cartoons in the social studies course positively affected their academic achievement.

As seen in Table 11, five students stated that they understood the lesson better, thanks to the cartoons, and three stated that they could focus on the lesson better. Regarding this issue, S10, S11, S12 and S13 respectively stated,

“For example, I get distracted in a normal class. But here, we also train our brains through cartoons. It was fun, and what I learnt became more permanent... I remember all of them because they were both amusing and entertaining....” (S10)

“I really think that it helps my academic achievement because we normally get distracted by other things. During the exam, when I think about the activities, I remember when I did and learnt things, but this is not the case in other lessons.” (S11)

“I think it increased my academic achievement because the visuals in cartoons improve my visual memory more and prevent me from being

Table 11
The impact of cartoons on academic achievement

Expressions	f
Allows a better understanding of the course content	5
Enables students to focus	3
Makes the course content more permanent	2
Makes the activities amusing and entertaining	2
Improves students’ visual memory	2
Makes the lessons enjoyable	1
Increases exam grades	1

distracted. I focus on the lesson and understand it better when it is explained with examples. Without those cartoons, I could not focus and understand the lesson better....” (S12)

“I realised that it contributed more to my academic achievement because when we are instructed in a normal way, we read and move on to the next part, but here, both the course content is reinforced better and the information is better engraved in our minds as it is more fun and amusing.” (S13)

In summary, S10, S11, S12 and S13 stated that the lessons were better-understood thanks to cartoons, they had fun, they focused better on the lessons, the information acquired became more permanent, and their visual memory improved.

The Impact of Cartoons on Students’ Attitudes

In the fourth question, students were asked how the use of cartoons affected their attitude towards the course. All participants

stated that the use of cartoons positively affected their attitudes.

As seen in Table 12, six students stated that the lesson was saved from boredom thanks to the cartoons, and six students emphasised that their interest and curiosity towards the lesson increased. Four indicated that the lesson was liked more. S9, S15 and S16 said,

“I think it influenced my attitude well. I used to be very bored in the lesson, but now I like it.” (S9)

“My interest in the lesson increased. I wonder what kind of cartoons we will read today, what the visuals will be like. I am happier; it is more fun.” (S15)

“The lessons run more smoothly. I understand them better. I am not bored anymore. I started to like the lessons more.” (S16)

Given the students’ views, it can be concluded that their attitudes were well affected, the lesson was saved from boredom, and their interest and love for it increased.

DISCUSSION

This study focused on the impact of using cartoons and creative comics in a social studies course on students’ academic achievement by taking into account the students’ views about the materials. The academic achievement test was administered as a pre-test and post-test to the two groups of students instructed either with creative comics or cartoons, and the control group

Table 12
The impact of cartoons on students’ attitude

Expressions	f
Saves the lessons from boredom	6
Increases interest and curiosity about the course	6
Makes the course more likeable	4
Makes the course more enjoyable	2
Initiates activities that make students happy	2
Allows a better understanding of the course content	2

instructed with the current curriculum. Then, a focus group interview was conducted with 16 students selected from the two groups instructed with the relevant materials.

The results of the one-way ANOVA test conducted before the experimental activity indicated no significant difference between the mean academic achievement scores among the participants in each group ($F(2.88) = 2.319, p = 0.104, p > 0.05$). In other words, the academic achievement levels of the groups were close to each other prior to the activities. According to the results of the one-way ANOVA test after the experimental application, there was a significant difference when the mean academic achievement scores of the groups were compared ($F(2.98) = 6.352, p = 0.003, p < 0.05$). Such a significant difference in post-test scores favoured creative comics and cartoons among all groups, with no significant difference between those instructed through creative comics and cartoons.

The literature review on creative comics indicated similar results. Within this framework, a number of studies on creative writing (Aktaş, 2009; Graham et al., 2021; Kırmızı & Adıgüzel, 2023; Mercan, 2016; Özdemir & Çevik, 2018; Veyis & Kolikpınar, 2021) and some studies on comics in different fields (Arı et al., 2019; Arslan & Akçay, 2022; Badeo & Koç, 2021; Chamisijatin et al., 2020; İlhan, 2016; Lin & Lin, 2016; Maryani & Amalia, 2018; Suryatin & Sugiman, 2019; Şahan, 2023; Ünal, 2018; Ünal & Demirkaya, 2019) are in parallel with this study in terms of their reported results.

In addition, the relevant literature review on cartoons demonstrated that many studies in different fields were reported to have positive influence on academic achievement (Ada & Sözen, 2021; Akbaş & Toros, 2016; Akkaya, 2011; Aksoy et al., 2010; Ayyıldız, 2010; Çakır & Aydoğdu, 2016; Durmaz, 2007; Et & Dilber, 2022; Güngör, 2018; Karaduman & Ceviz, 2018; Karakuş et al., 2012; Koçoğlu, 2016; Özşahin, 2009; Sidekli et al., 2014; Varışoğlu et al., 2014). Unlike these studies, Topkaya (2016) compared educational comics and concept cartoons, concluding that those instructed through comics turned out to be more successful.

The results of the focus group interviews show that the use of creative comics in the social studies course made significant contributions, given the remarks of participants stating that the course content was better understood and that their imaginations grew stronger. Senturk and Senturk (2023) reported that creative comics enriched the learning environment; Putra and Iqbal (2014) concluded that comics improved students' creative thinking and learning ability; Matuk et al. (2021) and Selong et al. (2021) found that the use of comics proved to have many benefits. In addition, Çetinkaya (2015) asserted that creative writing contributed to students' learning capacity.

Another result is that the use of creative comics in the social studies course does not have a negative aspect and positively affects students' academic achievement, and students understand the course content and

participate more in the lesson. Similar to this result, studies are reporting that comics boost students' academic achievement (Hermita et al., 2020; Özdemir, 2017; M. Şentürk & Şimşek, 2022; Topkaya, 2016).

Moreover, it also seems clear that the use of creative comics positively affected students' attitudes towards the course. The participants stated that their interest in the lesson increased, they started to like it, and the lesson became less boring. Research shows that the use of creative writing and comics positively affect students' attitude (Arı et al., 2019; Babayigit, 2019; Göçen, 2018; Gürsoy & Göçer, 2021; İlhan, 2016; Orçan, 2013; Kırmızı & Beydemir, 2012; M. Şentürk & Şimşek, 2022; Topkaya & Şimşek, 2015; Veyis & Kolikpınar, 2021). Unlike these results, Ünal and Demirkaya (2019) concluded that the use of educational comics in the social studies course did not affect students' attitudes towards the course.

Overall, the results, including students' views about the use of cartoons in social studies courses, indicated that the use of cartoons had many contributions. The participants stated that the course content was better understood with the use of cartoons since such materials helped visualise what was being taught. Similarly, Özşahin (2009) analysed students' views on the use of cartoons, concluding that lessons became more fun, the course content was retrieved more easily, and students' skills improved. Furthermore, Çiçek (2011) reported that cartoons enabled better learning opportunities, and the lessons were more fun. Durmaz (2007) investigated

the effect of concept cartoons, reporting that students became more careful and willing to considerably positive views. Similarly, Göksu and Köksal (2016) indicated that the use of cartoons improved students' problem-solving skills.

One more result is that the use of cartoons did not have a negative aspect and positively influenced students' academic achievement. It was determined that the students understood the lessons better and focused on them more. Research has also shown similar studies concluding that cartoons support students' academic achievement (Akengin & İbrahimoglu, 2010; Koçoğlu, 2016; Özşahin, 2009; Tuncel, 2017). In contrast, Akengin and İbrahimoglu (2010) emphasised the presence of some challenges in the use of cartoons with which some students had difficulties.

An obvious result based on the available data is that the use of cartoons has a positive effect on student attitudes towards the social studies course since the participants stated that the lesson was saved from boredom and became more popular and that their interest and curiosity increased. A number of studies with similar results have been found in the literature on the use of cartoons positively affecting students' attitudes (Akkaya, 2011; Koçoğlu, 2016). The results of the present study largely overlap with those of Akbaş and Toros (2016), suggesting that the use of cartoons provides permanent learning, is fun and interesting, and reinforces what has been learnt. Similarly, Barut and Akbaba (2017) reported that students' interest and curiosity increased with the use of cartoons.

Unlike this result, Çiçek (2011) reported that although the participants expressed positive views about the use of cartoons, there was no statistical significance in terms of post-test attitude scores.

CONCLUSION

Implication to Theory and Practice

This study revealed that cartoon and creative comic book materials in the social studies course provided many contributions to the students. From this point of view, these materials increased students' academic achievement and positively affected students' attitudes. In this context, it can be said that cartoon and creative comic materials attract students' attention, improve their imagination and problem-solving skills, make the lessons fun, provide better learning for students and are effective motivational tools. In addition, it can also be said that these materials save the lesson from boredom, make students love the lesson, visualise it and increase students' self-confidence. In addition, these materials can enable students to focus on the lesson, increase their participation, and play an important role in helping students gain the habit of writing and thinking.

Recommendations

Using cartoons and creative comics appropriate to the course content, intended learning outcomes, and student levels is recommended to save the social studies course from being boring and make it more interesting. It can also be suggested that

cartoons and creative comics be utilised at different grade levels and for different course content in the social studies course. In this context, it is recommended that future studies be conducted to benefit from cartoons and creative comics in social studies and different courses.

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