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The Effect of Cartoon-Enriched Instruction on Primary School Students' Academic Achievement and Attitude in Turkish Courses

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ABSTRACT

This study aimed to determine the effect of cartoon-enriched instruction on 4th grade primary school students' academic achievement and attitudes towards Turkish courses. The research was carried out with a total of 62 students studying in two separate fourth grade classes of a public primary school during the 2019-2020 academic year. A quasi-experimental design with pretest-posttest control group was used in the study. While the cartoon-enriched method was implemented with the students in the experimental group, regular curriculum was followed with the students in the control group. Achievement test and the attitude scale were applied to the students as a pre-test and post-test to obtain the research data. Normality tests, descriptive analyses, Mann-Whitney U and Independent Groups t-test were used in data analysis. According to the findings obtained as a result of the research, it was concluded that there was a difference between academic achievement and attitudes towards the course in favor of the experimental group, but this difference was not significant. While there was a difference in academic achievement according to gender in the experimental group students in favor of female students, there was no difference in the attitude towards the course according to gender. The research can also be applied to other courses taught in primary schools. Different humor elements can be used together with cartoons to improve students' attitude towards humor in a positive way. In the research, some acquisitions were selected and cartoons were created in a limited way. The study can be replicated by creating cartoons for all other acquisitions in Turkish courses.

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INTRODUCTION

The course in which the skills related to reading and writing are most extensively taught to the students is undoubtedly the Turkish course, which covers the basic learning areas related to language teaching. Great emphasis is placed on Turkish courses in the framework of native language education during basic education. "As stated in the Turkish Language Curriculum" (Ministry of National Education (MoNE), 2018), The Turkish Language Curriculum is structured in a way that includes knowledge, skills and values so that students acquire language skills and cognitive skills related to listening/watching, speaking, reading and writing that they can use throughout their lives, develop themselves individually and socially by using these skills, communicate effectively and acquire the habit of reading and writing with interest and affinity towards the Turkish language. Şahin (2011) argued that the most important requirement of being a nation that has reached the level of modern civilization is to have individuals equipped with knowledge and skills, and that this is only possible with the acquisition of effective reading and writing skills, which form the basis of education.

Language is a bridge that transfers the culture, civilization and history of a nation to future generations, in addition to being a cornerstone that ensures the agreement and unity of the society (Şahin, 2019). The foundation for raising students' language awareness and developing language skills is laid in primary school years (Göçer, 2010; Akyol & Şahin, 2019). Language education given to students affects their achievement in Turkish courses as well as in the other courses (Yaman & Gülcan, 2009; Şahin, 2020). For this reason, it is imperative that teachers make educational environments attractive and manage the learning and teaching process well to ensure the development of language skills in students and to make them love the language (Göçer, 2010).

The materials prepared in line with the teaching environment can enrich the classrooms in student-centered education that activates the student. In addition, if the methods and techniques used appeal to more than one sense, learning becomes permanent (Kurtdede Fidan, 2008; Şahin, Girgin & Özgeçen, 2021). According to scientific research findings, through experiences, people learn 83% by seeing, 11% by hearing, 3.5% by smelling, 1.5% by touching and 1% by tasting (Çilenti, 1991; cited in Yalın, 2010: 21). Based on this information, it can be argued that the sense of sight and visual elements based on vision are crucial in the education process.

Visual and written materials are among the main technologies and materials that can be used in the classroom environment (Kaya, 2006; Şahin ve Toprak 2021). One of the visual materials that can be used during the teaching process is the cartoons (caricature) that contain humor and criticism together (Melanlıoğlu, Tayşi, & Özdemir, 2012). Written narratives presented with visuals keep attention and interest alive and are easier to analyze and interpret in the mind (Eren Ökten & Sauner, 2015). Cartoons are one of the most important visual tools that make teaching interesting (Özer, 1990). However, creating cartoons is a difficult task that requires imagination and artistic skills (Chu et al., 2021).

A cartoon is a thought-provoking and humorous picture that exaggerates all kinds of events related to human and society (TDK, 2021). Cartoons have changed over the years in terms of their subjects and drawing styles. However, they have been a part of our lives in every way and they are used in different areas such as newspapers, magazines and posters. In recent years, cartoons are included in textbooks as well. Cartoons are among the visual materials that can be used in Turkish courses (Özdemir, 2019). As a matter of fact, the achievements related to the interpretation of cartoons are included in the Turkish curriculum in Türkiye (MoNE, 2017; MoNE, 2018, MoNE, 2019).

According to Özer (1998), a total of four elements are significant in cartoons: irony/humor, exaggeration, drawing and making people think (Cited by Göçer & Akgül, 2018). Thanks to the irony/humor element, even boring subjects can be easily grasped by the student. Cartoons guide students to explore and strengthen their sense of curiosity (Koç Akran & Kocaman, 2018). The activities of thinking, analyzing, interpreting and reaching a conclusion, which form the basis of cartoon

art, overlap with the aims of education (Melanlıoğlu et al., 2012). In addition, permanent learning is provided with the help of the cartoons which offer more visual content and the subjects are concretized because they appeal to more than one sense organ (Saat, Er & Üstün, 2018). Educational environments where cartoons are used are more interesting for both teachers and students, and students participate in the course more willingly. Thus, the use of cartoons in courses positively affects students' motivation and achievement (Bayülgen, 2011).

With the help of cartoons, students can criticize themselves and their environment in educational settings (Koç Akran & Kocaman, 2018). By activating their focus, interests and curiosity, cartoons help to ensure that students start the course with different ideas (Melanlıoğlu et al., 2012). Cartoons, which are among the visual elements, also facilitate the understanding of complex and abstract subjects. Based on these benefits, educators should know the irony technique of the art of cartoons, what is meant and its characteristics (Özer, 1990) in order to popularize the use of cartoons in educational environments.

Literature review shows that many studies emphasized the positive aspects of using cartoons. For example, Eren Ökten & Sauner (2015) stated that using illustrated texts and visual content in language education improves reading, effective use of language, critical thinking and interpretation skills. In addition, they reported that grammar subjects are taught more easily, entertainingly and quickly with cartoons, advertisements, illustrated anecdotes, and comics and students understand linguistic forms and meanings more easily along with their cultural dimensions. Bayülgen (2011) found that cartoons used for teaching purposes increase fun, facilitate learning, recall, creative thinking, concretization and increase motivation towards the course. In their research, Varışoğlu, Şeref, Gedik &Yılmaz (2014) concluded that the teaching technique with cartoons is effective in teaching idioms and proverbs. Temizkan (2011) emphasized that drawing cartoons of heroes in novels, stories and fairy tales read together in the classroom and using them for communication is beneficial in the field of learning reading.

Enriched course environments increase student interest in the course. It is known that educational environments where students can express themselves comfortably also affect their attitudes towards the course positively (Savaş, 2014). For this reason, it is believed that the use of cartoons is important in mother tongue teaching. It is thought that cartoons will positively affect student attitudes towards the course, as they contain visual and humorous elements, and thus, students' academic achievement can be increased. It is believed that students who are successful in Turkish courses will also increase their self-confidence, their social communication skills will develop positively, and it will contribute to their achievement in other courses.

Based on these views, the problem statement of this study was selected as follows: "Is there a significant difference between the attitudes and academic achievement levels of the fourth grade students in the Turkish course who receive cartoon-enriched instruction and who receive regular instruction by following the MoNE curriculum?" Answers to the following sub-problems were sought in line with this problem:

1. Is there a significant difference between the Turkish course academic achievement post-test scores of the students who received cartoon-enriched instruction in the Turkish course and those who studied within the scope of the MoNE curriculum?

2.Is there a significant difference between the Turkish course attitude post-test scores of the students who received cartoon-enriched instruction in the Turkish course and those who studied within the scope of the MoNE curriculum?

3. Is there a significant difference between the academic achievement and attitude post-test scores of the students who received cartoon-enriched instruction in the Turkish course based on gender?

METHOD

Research Design

A quasi-experimental model with pretest-posttest control group, which is one of the quantitative approaches, was used in this study. This model includes experimental and control groups which are assigned randomly and measurements are made before and after the experimental procedure in both groups (Karasar, 2009). If the average scores of the groups differ in the test, this gives an idea about the effectiveness of the methods (Büyüköztürk, Kılıç Çakmak, Akgün, Karadeniz & Demirel, 2022). In the study, experimental group was taught with cartoon-enriched instruction while the control group was taught by following the MoNE curriculum.

Table 1. *Research model (Pretest-Posttest control group model)*

Group	Pre-test	Experimental Procedure	Post-test
G1	At1	X	At2
	Ac1		Ac2
G2	At1		At2
	Ac1		Ac2

In the above table; G1 is the experimental group, G2 is the control group, At1 is the attitude scale pre-test, At2 is the attitude scale post-test, Ac1 is the course achievement pre-test, and Ac2 is the course achievement post-test.

Research Sample/Study Group/Participants

The universe of this research consisted of students who continued their education in the fourth grade of primary schools in a city center in the Central Anatolia Region in the 2019-2020 academic year. The research sample was composed of students who attended two separate fourth grade classes in a primary school in this city center. Since the sample was chosen from the students in the primary school where one of the researchers worked, the convenient sampling method was preferred among the non-random sampling methods. According to Büyüköztürk et al. (2022), convenient sampling is gathering data from a sample that the researcher can easily reach. The experimental group included a total of 30 students, 17 girls and 13 boys, while the control group was composed of a total of 32 students, 13 girls and 19 boys. A total of 62 students participated in the study. The school, where the experimental and control groups were formed, has a total of nine fourth grade classes. Among these nine classes, two classes were selected based on the similarity of socio-economic and academic achievement levels and their willingness to participate in the study on a voluntary basis. The method of drawing lots was used to identfy the experimental and control classes from these two classes selected as the sample. Table 2 presents the demographic information about the study sample.

Table 2. *Participants' demographic information*

Variable		Experimental Group		Control Group	
		f	%	f	%
Gender	Female	17	56,7	13	40,6
	Male	13	43,3	19	59,4
	Total	30	100	32	100
Maternal Educational Level	Primary school degree	11	36,7	9	28,1
	High school degree	15	50,0	12	37,5
	University degree	4	13,3	11	34,4
	Total	30	100	32	100
Paternal Educational Level	Primary school degree	4	13,3	4	12,5
	High school degree	17	56,7	18	56,3
	University degree	9	30,00	10	31,3
	Total	30	100	32	100

According to Table 2, female students constituted 56.3% of the group, while male students constituted 43.3% in the distribution of the students constituting the experimental group of the research

by gender. Male students made up 59.4% of the control group students, while female students made up 40.6% in the control group. When the educational status of the parents of the students in the experimental and control groups was examined, it was seen that the majority of them were high school graduates.

The Turkish Course Achievement Test was applied in this study as a pre-test to determine the academic achievement of the groups before the experimental procedure. Kolmogorov-Smirnov test was performed to check whether the pre-test results showed a normal distribution. According to the normality test results of the groups, it was seen that the data did not show normal distribution ($p<.05$). Since the data did not show normal distribution, Mann-Whitney U test was used. It was found that there was no significant difference between the two groups according to the calculated Mann-Whitney U value and the level of significance in the 95% confidence interval ($U= 445,500$; $p>0.05$). This finding was interpreted as that the experimental and control groups were equal to each other in terms of course achievement scores before the research.

In the study, the Scale of Attitude towards the Turkish Course was given as a pre-test to determine the equivalence of the groups in terms of their attitudes towards the course before the experimental procedure. Kolmogorov-Smirnov test was performed to check whether the pre-test results showed a normal distribution. According to the normality test results of the groups, the data showed normal distribution ($p>.05$). Since the data showed normal distribution, independent groups t-test was performed. It was found that there was no significant difference according to experimental and control groups' course attitude scale pre-test scores ($t(60) = -,114$; $p>0,05$). This finding showed that the experimental and control groups were equal in terms of their attitudes towards the course before the research.

Research Instruments and Processes

Turkish Course achievement test

The achievement test was developed by the researchers in accordance with the acquisitions in the fourth grade Turkish course curriculum. As the first step, the curriculum was examined and the subjects and acquisitions that would form the basis of the research were identified. While selecting the acquisitions, examples that were suitable for visualization and cartoons for speaking, reading comprehension and writing skills were selected. The acquisitions of the fourth grade Turkish course in the 2018 Turkish Curriculum, textbooks and reference books were examined after the Table of Specifications was prepared. The achievement test, which was prepared to evaluate the acquisitions in the fourth grades by using the relevant resources, was prepared in draft form with 56 questions. The number of questions was reduced to 39 after expert opinions. The achievement test, which took its final form with 39 questions, was piloted with 146 participants studying in the fifth grade and analyzed in the SPSS program. The item difficulty indexes of the 4., 6., 15., 18., 19., 24., 29., 37. questions were found to be low so they were excluded; 2., 5., 20., 23., 34., 35., 36. questions were excluded from the test as well due to low discrimination indices and 8., 13., 38. and 39. questions were also excluded due to low item total correlation and Alpha reliability coefficients. Hence, the test was finalized with 20 questions.

Scale of attitude towards the Turkish Course

The "Scale of Attitude towards the Turkish Course" developed by Topçuoğlu Ünal and Köse (2014) was used to measure student attitudes towards the course. The 5-point Likert type scale consists of 27 items. The Cronbach's Alpha reliability coefficient of the scale was found to be ,914 by the researchers. The validity of the scale was also demonstrated with the results of exploratory and confirmatory factor analyzes. Necessary permissions were obtained before using the scale. In the scale, 19 items have statements related to positive attitudes and 8 items have statements related to negative attitudes. The scale was applied to the experimental and control group students as pre-test and post-test. The Cronbach's Alpha reliability coefficient of the scale applied as a pre-test before the procedure was

,878; while the Cronbach's Alpha reliability coefficient of the scale was found to be .904 when it was applied as a post-test after the procedure.

Data Analysis

The data were analyzed in SPSS program and compared at $p \leq 0.05$ significance level. The normal distribution of the data was examined by Kolmogorov-Smirnov and Shapiro-Wilk tests. Descriptive analyzes were performed with Mann-Whitney U, Independent Groups t-test in the research.

Implementation Process

The cartoons used in the research were drawn by the researchers. Before the cartoons were drawn, the researchers watched educational videos about drawing cartoons and examined the cartoons used in education and the cartoons that were used in previous scientific researches related to this subject. The literature on the use of cartoons in education and training was reviewed to have preliminary knowledge of cartoon drawing. Then, the course curriculum acquisitions were examined to identify which acquisitions would be more appropriate for using cartoons. While determining the learning acquisitions, 11 were selected as suitable for visualization and cartoon drawing. Cartoon drafts were created and expert opinions were consulted in accordance with the selected acquisitions and necessary modifications were made after receiving expert opinions. The completed cartoons were transferred to the computer environment and printed out in color. Some of the created cartoons were drawn for more than one acquisition.

These prepared cartoons (61 in total) were implemented to the experimental group students for one course per week for 13 weeks. The control group students continued their education and training in the manner required by the curriculum. The professional seniority of the classroom teacher in the experimental group was 17 years, and that of the classroom teacher in the control group was 24 years during the time of the study. Both teachers were females. The academic achievement and attitude levels of the experimental and control group students were measured before and after the procedures.

The subject to be covered in the course was explained to the students verbally and in writing. Students were divided into groups in a manner where each group received a cartoon. The cartoons selected in accordance with the relevant acquisition were distributed to these groups. The groups were given five minutes to analyze the cartoons. Then, the cartoons were exchanged between the groups. Each group was given the opportunity to examine each cartoon, to identify examples suitable for the subject and to take notes on these examples. Later, the selected group members were given the opportunity to express the examples in the cartoons. Particular attention was paid to have each group member talk about a cartoon so that each student could have a say. Meanwhile, the cartoon the students were discussing was projected onto the wall by using a projection. Thus, it was ensured that each student in the class could see and notice the example. Meanwhile, the examples given by the student were shown by the class teacher.

The humor/irony of the characters and the story in the cartoons were presented by the guidance of the teacher. A fun teaching atmosphere was created by using different jokes and witticisms. Then, the cartoons projected on the wall were thoroughly examined with the teacher’s guiding questions and the students became more active in the course. Students read the speech bubbles in the cartoons and sometimes they were asked to act them out. The classroom teacher asked guiding questions so that the students recognized the rules and examples related to Turkish in the sentences in the speech bubbles. Then the students were asked to provide different examples. The examples given by the students were evaluated in the classroom environment and feedback was received to understand whether the subject was fully comprehended. In addition, examples related to the topics previously covered in the cartoons were found by the students with the help of the classroom teacher’s guiding questions. Cartoons suitable for drama demonstration were acted out by student groups. Figure 1 presents an example of a cartoon prepared for the acquisition: Finds synonyms for words:

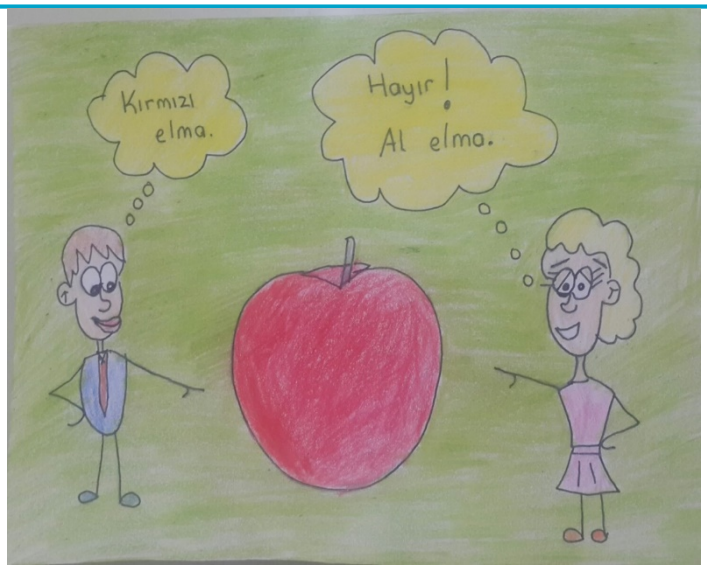

Figure 1. *Sample cartoon*

FINDINGS

Findings on Academic Achievement

The independent groups t-test was performed since the data showed normal distribution when tested to see whether there was a significant difference between the scores of the experimental and control group students in the academic achievement test after the experimental procedure. Table 3 present these results.

Table 3. *Independent groups t-test results based on academic achievement post-test scores*

Group	n	$\bar{X}$	S	sd	t	p
Control Group	32	63,91	17,03	60	-,369	,713
Experimental Group	30	65,50	16,94			

According to Table 3, there was no significant difference in experimental and control groups' academic achievement post-test scores (p>0,05). It was found that the arithmetic average of the academic achievement post-test scores of the students who receive cartoon-enriched instruction was higher than the other students, but this difference was not statistically significant.

Findings Related to the Attitude towards the Course

Since the data did not show normal distribution, Mann-Whitney U test was performed to test whether there was a significant difference between the scores of the students in the experimental and control groups after the experimental procedure. Table 4 presents these results.

Table 4. *Mann-Whitney U Test results based on attitude scale post-test scores*

Group	n	Mean Rank	Rank Sum	U	p
Control Group	32	29,81	954,00	426,000	,447
Experimental Group	30	33,30	999,00		

According to Table 4, there was no significant difference in the experimental and control groups' post-test attitude scores (p>0,05). It was found that the academic achievement post-test mean score of the students who received cartoon-enriched instruction was higher than the other students, but this difference was not statistically significant.

Findings Related to Gender Variable in Academic Achievement and Attitude towards the Course

Since the academic achievement and attitude post-test scores of the students who received

cartoon-enriched instruction did not show a normal distribution according to gender, the Man-Whitney U Test was used to determine whether there was a difference.

Table 5. *Mann-Whitney U Test results of academic achievement and attitude scores by gender*

Variable	Group	n	Mean Rank	Rank Sum	U	p
Achievement	Female	17	18,35	312,00	62,000	,040
	Male	13	11,77	153,00		
Attitude	Female	17	17,09	290,50	83,500	,258
	Male	13	13,42	174,50		

According to Table 5, a significant difference was found between the academic achievement post-test scores of the students who received cartoon-enriched instruction according to gender ($p<0,05$). Considering the mean rank, it was found that the mean rank of female students was higher than that of male students. Accordingly, it can be argued that female students' academic achievement in cartoon-enriched instruction was significantly higher than that of male students. There was no significant difference between the levels of attitude towards the course and the post-test scores according to gender ($p>0,05$). In other words, attitude towards the course did not change according to gender when students received cartoon-enriched instruction.

DISCUSSION, CONCLUSION, RECOMMENDATIONS

As a result of the research, no statistically significant difference was found between the academic achievement levels and attitudes of the students in Turkish course whether they studied under the curriculum of the MoNE or received cartoon-enriched instruction. It was concluded that the academic achievement post-test mean scores of the students who received cartoon-enriched instruction was higher than the mean of the students who studied within the scope of the MoNE curriculum, but this difference was not statistically significant. This result may be related to the insufficient knowledge and experience of the classroom teacher who participated in the study about using humor, a lack of sense of humor, or inability to use cartoons in the classroom in an adequate and appropriate manner.

Due to the scarcity of studies on using cartoon-enriched instruction in Turkish courses, studies based on using cartoons were examined for other courses. Parallel findings were reached in some other studies that are similar to the results obtained in this study. There are studies that conclude that cartoon-enriched instruction does not affect academic achievement in science education, geography education, and science and technology teaching (Demirel & Aslan, 2014; Şeyihoğlu & Şahin, 2019; Yılmaz, 2020).

On the other hand, here are also studies in the literature that do not support these results. Yılmaz, Yaşar Sağlık & Kadan (2021) determined that the speaking skills of the group of students taught with concept cartoons were significantly better in the "language and expression", "content" and "presentation" dimensions. Syamsuri, Muhsin, and Nurmayani (2016) concluded that the use of cartoons has an effect on learning writing. Research also concluded that teaching with cartoons is more effective in teaching proverbs and idioms compared to the current curriculum (Varışoğlu et al. 2014). There are also studies that conclude that cartoon-enriched instruction increases academic achievement in science courses (Çetinkaya, Gök & Yalkın, 2022; Kaya, Özay Köse & Konu, 2016; Kocakavak & Erökten, 2021; Ocak, Güleç Islak & Ocak, 2015; Yılmaz Korkut & Şaşmaz Ören, 2018; Yurttadur & Pehlivan, 2020); in science and technology teaching (Başarmak & Mahiroğlu, 2016; Evrekli & Balım, 2010); in science, technology, engineering and mathematics education (Ergün & Külekçi, 2020); in social studies courses (Ada & Sözen, 2021; Tokcan & Alkan, 2013); in mathematics teaching (Katipoğlu, Eken, & Körbay, 2017; Karaca, Kuzu, & Çalışkan, 2020) and grammar teaching (Akkaya, 2011).

It was determined that the post-test scores of the students taught with cartoon-enriched instruction were higher than the students studying following the MoNE curriculum, but this difference was not

statistically significant. This result may be related to limiting the weekly course hours taught with cartoons to one hour, insufficient implementation time and the low number of cartoons used in classes. Literature review presented studies in parallel with the finding that cartoon-enriched instruction did not significantly affect the attitude towards the course. Başarmak and Mahiroğlu (2016) concluded that cartoon-enriched instruction did not affect the attitude towards humor. There are also studies in the literature that do not support these results. There are studies in the literature that have found that cartoon-enriched instruction positively affected students' attitudes towards the course. Çetinkaya et al. (2022) concluded that the use of concept cartoons increased the attitude towards science courses. Savaş (2014) reported that the use of humor (via anecdotes, humorous stories, memoirs, photos and cartoons) in Turkish courses increased the attitude towards the course. Akkaya (2011) also found that the use of cartoons in grammar teaching increases the attitude towards the course in Turkish courses.

Based on gender, there was a significant difference between the academic achievement post-test scores of the students receiving cartoon-enriched instruction in favor of girls. However, there was no significant difference between post-test attitude scores by gender. There are studies with similar findings. Similar to the results of this research, Şahin and Keşan (2022) concluded that female students' achievement in geometry supported by concept cartoons was higher than that of male students, and their attitudes towards the course, but unlike the result of this research, female students had more positive attitudes compared to boys. Ocak et al. (2015), on the other hand, concluded that there was no significant gender difference in academic achievement when concept cartoons were used in science courses.

Considering that it takes longer for students to change their attitudes towards a course, it may be recommended for similar studies to keep the practice time longer or to allocate more course hours to practice during the week. The research can also be applied to other courses taught in primary schools. Different humor elements can be used together with cartoons to improve students' attitude towards humor in a positive way. In the research, some acquisitions were selected and cartoons were created in a limited way. The study can be replicated by creating cartoons for all other acquisitions in Turkish courses.

Seminars can be organized for teachers on the preparation of cartoons and their use in courses. Acquisitions including cartoons and humor can be included in the curriculum. Elements containing humor and cartoons can be included more among the visuals in the textbooks.

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