

## Beyond Textbooks: A Manga-Based Approach to Values Education

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### Abstract

The purpose of this study is to examine the effect of using manga in values education on the level of knowledge, perception, and synthesis skills of high school students regarding root values. In the study, a quasi-experimental design with a pretest-posttest control group was used as one of the quantitative research designs. In order to achieve the specified purpose, a quasi-experimental design with a pretest-posttest control group was used among the quantitative research designs. Data were collected using researcher-developed rubrics and opinion forms. The study group consisted of a total of 60 students in the ninth and eleventh grades of a high school in a central city in Central Anatolia. Half of the students were assigned to the experimental group and half to the control group. Participants were selected through "convenience sampling". The data collected from the interview form were tabulated and presented, while the data obtained from the rubrics were statistically analyzed. According to the findings obtained; it was concluded that the root values in manga were perceived differently by the participants, all the root values were included in the original manga, and more than half of the participants found the manga sufficient in terms of all the root values, and the participants mostly stated that the manga was successful in conveying the root values. Therefore, it can be said that manga can be successful in teaching moral values. By evaluating the results, it is concluded that manga can be used as an alternative tool in values education and it is recommended to use it as a course tool in values education.

**Keywords:** Values Education, Root Values, Manga.

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**Received:** 11.04.2024 – **Accepted:** 05.06.2024 – **Published:** 30.06.2024

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## **INTRODUCTION**

Values education focuses on enabling students to acquire the skills necessary for their personal development, character formation, and social integration within the framework of general education. For this reason, from the past to the present, education aims not only to gain academic knowledge and skills, but also to develop the values that individuals should have (Yıldırım et al., 2017). The curriculum prepared by the Ministry of National Education (MoNE) forms the basis of academic education in primary and secondary education in Turkey (Sağlamöz & Soysal, 2021). With the values education directive published by the MoNE in 2010, the values that should be gained by students as well as academic education have been determined, and the Board of Education (BoE) has determined the values that are aimed to be transferred to students among the values expressed in this directive; justice, friendship, honesty, self-control, patience, respect, love, responsibility, patriotism and benevolence. In addition, BOE has defined attitudes and behaviors related to these values (BoE, 2017). Values education is of vital importance to ensure that students grow up as responsible, sensitive and ethical individuals in society. In order to better convey values, in addition to traditional teaching methods, alternative teaching tools are needed that will attract the attention of young people and ensure their active participation in the process.

Today's educators are constantly looking for innovative ways to engage students and teach them important lessons. In addition to traditional teaching materials, visual and interactive content is becoming increasingly important. Manga, a type of visual narrative, draws attention as a form of media that is especially popular among young people (Bitz,2020). The manga are known for their rich storylines that include a variety of universal themes and deep character developments. With these features, it is thought that students can be powerful tools for empathizing, understanding ethical values and developing their social responsibilities (Aoyama, et al., 2020).Researchers believe that manga is a way for educators to gain a deeper insight into the world of students and to develop more effective and meaningful teaching strategies that take into account their interests (Shin & Sohn, 2020). In this research, it is suggested that manga can be used as an effective tool in the field of values education, and that it can be an innovative and effective method that can contribute to both the academic and personal development of students. Therefore, this article discusses how manga can be an effective tool in values education and examines the potential of this tool in the field of education.

In recent years, it has been seen that individuals born in 2000 and later, especially known as 'Generation Z', have shown interest in manga and anime in our country (Yücekök, 2019). Mangas can cover many root values in terms of their content. When the literature is examined, it is observed that researchers generally examine the root values in various curricula or conduct research on the use of comics/manga as teaching tools. However, it is known that anime and manga transfer value quite

intensely. It is thought that the transfer of root values, which are abstract concepts, through manga, which is a popular narrative genre, will yield successful results. This research is important because it aims to contribute to the literature by discussing the role of manganese in transferring root values. This study investigates how manga, which belongs to the comic book genre as a part of popular culture, can become an effective teaching tool in values education. This research was carried out within the framework of the ten root values (patriotism, love, respect, benevolence, honesty, patience, responsibility, justice, friendship, and self-control) determined by Board of Education (BOE, 2017) and the definitions of these values. In this sense, the main purpose of the study is to examine the effect of the use of manga in values education on the level of knowledge, perception and synthesis skills of secondary school students about root values.

Sub-problems related to the research are given below.

1. Is there a significant difference between the pre-test (VBKLR) scores of the experimental and control groups?
2. Is there a significant difference between the posttest (VBKLR, MBDPR, MBSCR) scores of the experimental and control groups?
3. Is there a significant difference between the pre-test and post-test (VBKLR, MBDPR, MBSCR) scores of the experimental and control groups?
4. What are the participants' views on the use of Manga as an alternative instructional design in values education?

## **CONCEPTUAL FRAMEWORK**

Regarding the fact that visual expression in comic book format attracts the attention of students, the question "Why do people like to read comics?" comes to mind. When the research literature is examined; comics can create a multifaceted (Suzuki, 2020), impressive, catchy and humorous (Şentürk&Çiçek Şentürk, 2023) narrative by combining visual and written expression, and attract the attention of all ages and segments thanks to the visuals used (Oymak, 2018; Unser-Schutz, 2019), it has been observed that the use of visuals together facilitates understanding and reading (Uslu-Üstten&Pilav, 2016). For these reasons, comics are thought to have become a popular reading material among people. The Turkish Language Association (2024) defined the comic book as "A novel that presents the subject and the chain of events to the reader with an uninterrupted illustrative method." and manga as "Japanese comics." Manga, or "humorous painting", originally appeared as a simple caricature. The manga probably has its origins in "Chojugiga" (Çojuu giga), meaning

humorous pictures of birds and animals, illustrated by Kakuyu or Toba (1053-1140), an artist who lived in the 12th century. (Toku, 2001). Manga, on the other hand, developed as a graphic narrative through the work of Ukiyo-e or Hokusai Katsushika (1760-1849). With the expansion of the readership and age range over time, manga has turned into a unique Japanese comic book style that reflects the complexity of human life with graphic expression (Toku, 2001). The strengthening reinterpretation of manga coincides with the aftermath of World War II. After the Second World War, the occupying American authorities resorted to various ways to shape Japanese social dynamics, such as censorship, determination of education and training content, and close control of institutions. However, they overlooked the manga. In this process, the manga was restructured with the aim of instilling national consciousness in Japanese youth. Over time, manga has turned into an ideology, a way of life, a culture on its own and has played an important role in transferring Japanese culture to new generations (Öztekin, 2008). This trend has increased especially after World War II with the influence of US comics and Disney animation, and original manga has reached the highest level of development of its style (Toku, 2001).

Comics/manga, in addition to being a very popular popular culture product, are also used for educational purposes and can activate both visual and verbal perception skills of the reader thanks to the combination of visuals and text (Topkaya, 2014; Sahara, 2020). The fact that comics are fast and easy to understand shows that they can be a suitable teaching tool for the education of large masses (Şentürk & Şimşek, 2021). Comic books attract attention by covering many topics, from superhero stories to science fiction. It is known that comics trigger readers' imagination and nurture their creativity with their extraordinary scenarios (Akcanca, 2020; Sahara, 2020; Şentürk & Şimşek, 2021; Topkaya&Yılar, 2015;). Researches carried out; educational comics and cartoons increase the desire to study, create permanent learning, develop thinking skills, positively affect motivation, have visual elements, are fun, easy to understand, and have a positive effect on students' academic success because they are remarkable (Şentürk&Şimşek, 2021; Topkaya&Yılar, 2015;Topkaya et al., 2023). Comics often feature complex and detailed development of characters. This allows readers to connect emotionally with the characters. Ceylan-Dadakoğlu et al. (2022) stated that messages about root values are given to the audience through the characters in manga and anime, and identification with the hero allows empathy. Finally, Cheesman (2006) states that comic books support critical thinking and ethical discussions in the classroom, positively affect the classroom atmosphere and turn it into a fun environment. He also states that comics do not lose their positive effects on students even with the passage of time. Considering all these factors, it seems possible to say that various psychological, educational and cultural factors come together to understand why comics are loved.

Manga reflect social phenomena as they contain images of visual and popular culture (Sahara, 2020). These educational drawings often include important values such as patriotism, kindness,

respect, love, and benevolence (Coşkuncay, 2019). Manga can also help students shape their own realities and values (Wilson, 2020). Anime and manga artists bring universal subjects and values to their works by feeding on their own cultures (Taş Alicenap, 2014). For example, popular manga such as Bleach, Pokemon, and Sailor Moon are followed by a large fan base around the world and are noted for reflecting social values (Rankin-Brown & Brown, 2012). In this way, manga are able to spread cultural interaction and values both in Japanese society and internationally.

Academic research on manga is on the rise due to its global popularity and rich narratives that reflect a variety of social and cultural themes (Perry et al., 2023). Akcanca (2020) stated that educational comics can be useful in teaching abstract and complex concepts. Akhan et al. (2020) state that informal education is effective in teaching values. Yağ (2018) is of the opinion that it would be beneficial for comics with cultural transfer power (without distinguishing between domestic and foreign) to become widespread in conveying our own culture. Avaroğulları and Mutlu (2019) state that the use of comics/manga can give positive results and be beneficial in education. Keskin and İlhan (2021) state that since root values are abstract concepts, the use of different tools in values education, and the use of comics as a material in education can provide a natural value transfer. In this context, it is thought that squads can contribute to values education.

It is known that there are academic studies examining the relationship between manga and values education. Ceylan-Dadakoğlu et al., (2022), in their research with students who are manga readers and anime viewers, concluded that secondary school students do not learn enough root values in lessons. Again, in the same study, the participants stated that all root values are frequently included in manga and anime. Kawentar and Noor (2021) examined manga as educational material about the environment and concluded that manga is a very effective educational tool for conveying moral messages to readers. In their studies, Ak et al. (2020) aimed to raise awareness by frequently using visual narratives to convey abstract concepts such as democracy and values such as justice and tolerance to students, which may be difficult to understand by students. Aşçı (2020), in his study in which he examines comics in Turkish textbooks in terms of values education, reveals that comics are an effective material in transferring values. Again, on the subject of values, Topkaya (2016) stated that the use of comics in education makes values more permanent. International literature suggests that the use of educational comics can be used as an effective tool in teaching history and civics (Özdemir et al., 2022). As can be seen, it has been revealed that the use of comics is used both to increase the quality of education and to transfer values and positive results have been obtained. As a result of the literature review, it is thought that manga have the potential to transfer root values. Therefore, in this research, original manga were used based on the idea that the manga to be prepared for Turkish culture will be an effective tool in conveying root values. In this context, the problem

situation of this research; to discuss the usability of manga as a means of transmission and to investigate the contributions of its use in instructional processes to values education.

## METHOD

### Design of the Study

In this study, a quasi-experimental design with a pre-test-post-control group, one of the quantitative research methods, was used to examine the effect of manga use on students' level of knowledge, perception and synthesis of root values (Christensen, 2020; Fraenkel, 2023; Tabachnick & Fidell, 2019; Trochim & Donnelly, 2016). The experimental design encompasses research that involves the random assignment of participants to different levels of the independent variable or to groups. In order to support the quantitative data obtained from the research, a semi-structured opinion form was used in which the opinions of the participants were collected.

### Study group

The study group of this research consists of a total of 60 students who continue their education in the ninth and eleventh grades of a high school located in the city center of Central Anatolia. While the experimental and control groups were formed, 60 students were divided into two groups, 30 students in each group. Participants were selected by "random sampling" method. In the random sampling method, it is the observance of the non-randomness rule, which is explained as the sampling probability of the sampling units being equal and independent. In this sampling method, all individuals have the same probability of being selected, and the choice of one individual does not affect the selection of other individuals. The valid and best way to select a representative sample is random sampling (Büyüköztürk et al., 2019). The distribution of students according to gender and various variables is given in Table 1.

**Table 1** Distribution of Students by Groups and Genders

Variable		Experimental Group		Control Group		Sum	
		f	%	f	%	f	%
Gender	Female	14	47	15	50	29	48
	Male	16	53	15	50	31	52
	Sum	30	100	30	100	60	100
Mother's Education	High school	11	37	14	47	25	42
	University	19	63	16	53	35	58
	Sum	30	100	30	100	60	100
Father's Education	High school	9	30	8	27	17	47
	University	21	70	22	73	43	53
	Sum	30	100	30	100	60	100
Income Level	15000 and below	6	20	8	27	14	24
	15000 - 20000	11	37	12	40	23	38
	20000 and above	13	43	10	33	23	38
<b>Sum</b>		<b>30</b>	<b>100</b>	<b>30</b>	<b>100</b>	<b>60</b>	<b>100</b>

## Data collection

In the quantitative dimension of the study, data were collected with three different Rubrics developed by the researchers before and after the application. Qualitative data used to support quantitative data were collected through a semi-structured opinion form. The data collected in the process are given in Table 2.

**Table 2** Data Collection Process

Groups	Pre-Test	Final Test
Experimental Group	Rubric (VBKLR)	* Rubric (VBKLR, MBDPR, MBSCR) * Student Testimonial Form
Control Group	Rubric (VBKLR)	Rubric (Knowledge Level)

\*In Table 2, the data collection tools used for the experimental and control groups are expressed.

## Rubric

Rubric was developed by the researchers in order to determine the effect of the use of manga in values education on secondary school students' views on root values. The most important purpose of using DPA in the study is to measure how students can use the information they have obtained in new situations. Thus, it is aimed to evaluate students' higher-order thinking skills, as well as to develop these skills and support their learning (Andrade & Boulay, 2003; Hafner & Hafner, 2003).

The rubric is divided into two as holistic and analytical. In analytical rubrics, process skills are evaluated, while holistic rubrics focus on outcome evaluation (Campell, 2005). For this reason, this study focused on the development of analytical rubrics because it was suitable for the purpose of the research.

In the process of developing the analytical rubric used in the study, the steps suggested by Andrade (2001) were followed. These steps are:

- i) Determining the criteria to be used in performance evaluation
- ii) Deciding on the rubric option
- iii) Determination of performance levels and definitions of these levels
- iv) Obtaining expert opinion

While creating the rubric, at the stage of determining the criteria, firstly, the researches on values education were examined and the criteria that overlapped with the course objectives prepared in accordance with the determined basic values were determined. The boundaries of the criteria determined in this process are clear, arranged in a way to increase the observable characteristics, and the decision was made by taking into account the opinions of secondary school students. The criteria determined are related to each other, but they are determined as criteria that do not completely

coincide with each other. In this way, the level of achievement of the research purpose of the students was evaluated with the curriculum designed from different perspectives. After the criteria were determined, the definitions and explanations of each criterion were examined. As a result, 3 different criteria were determined for 10 root values and scored with 4 different degrees of success. These criteria are the level of knowledge, the level of perception and the level of synthesis. The determined criteria were arranged in the scoring matrix and the performance of the student at that level was defined from successful to poor (from 3 to 0) at the pore where the scoring level intersected for each criterion. The effect of the course taken by secondary school students on values education on their development was scored as insufficient (0), weak (1), average (2) and successful (3) according to four criteria. In this case, the lowest score that can be obtained is 0 and the highest score is 30. The scores obtained by the students were obtained by scoring each criterion separately and adding the scores. Necessary explanatory guidelines have been added to the prepared analytical scoring key, making it an effective and objective measurement tool. Expert opinion was consulted on the validity of the developed analytical rubric and the necessary arrangements were made on it and it was made ready for application.

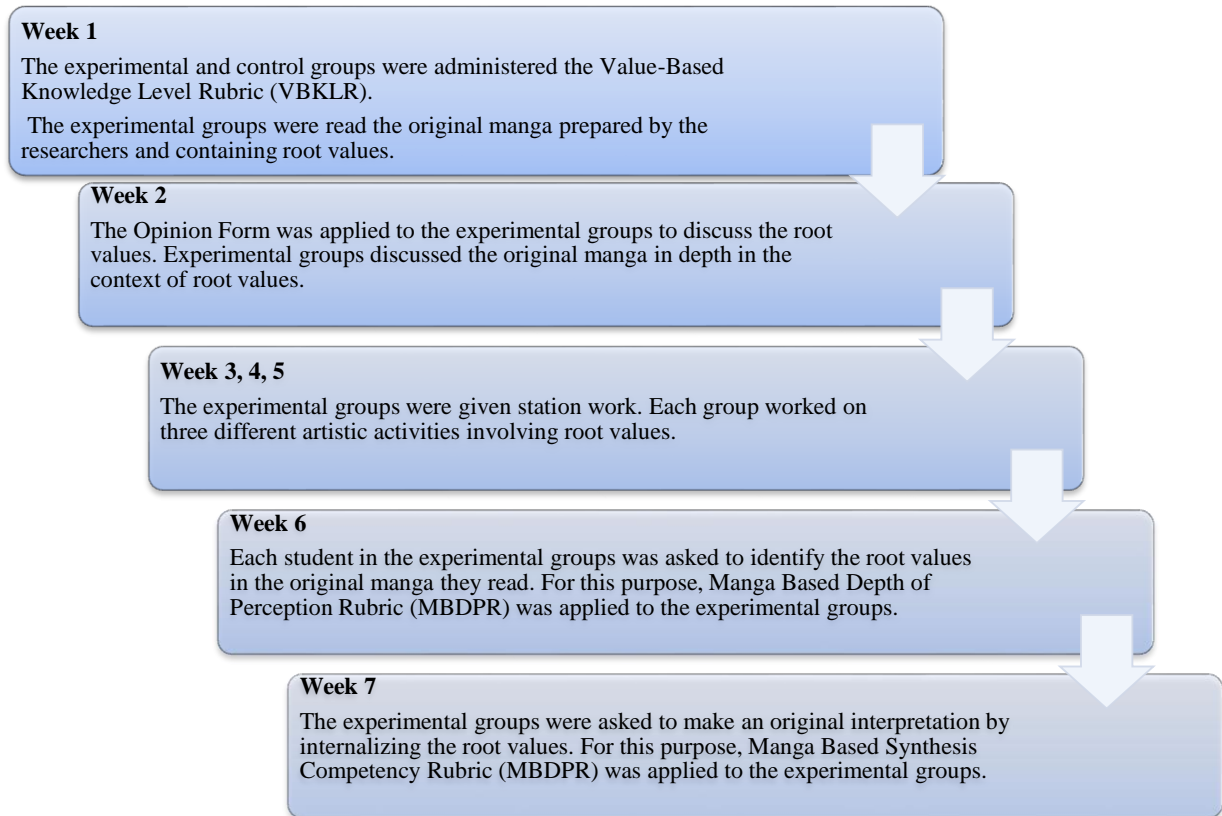
### **Student Testimonial Form**

In order to support the quantitative data obtained by the researchers, a semi-structured opinion form evaluating the teaching process was created (Annex 2). The opinion form was applied only to the experimental group students in order to evaluate the manga-based teaching designs prepared by the researchers within the framework of root values and to evaluate the use of manga in the teaching processes.

### **Application Process**

The roadmap for the implementation of the research is given in Figure 1.





**Figure 1** Research Process

## **Creation of Manga**

### ***Manga "Interdimensional Mission"***

The script and drawing of the manga used in this research are completely original and belong to the illustrator, who is a ninth grade student. The manga titled "Interdimensional Mission" was prepared in four stages. In the first stage, the ten root values determined by BOE (2017) were examined in depth by researchers, authors and illustrators. In the second stage, a script in the style of Shounen/science-fiction was written. The root value of responsibility is placed on the basis of manga, and other root values are directly or indirectly addressed. The main purpose of the manga in instructional design is to create a space where root values can be questioned. With the main character of the manga, Ülgen, saving the whole world from extinction, the root value of responsibility was explained, different root values were mentioned with other events that happened to him, and it was tried to transfer the root values to the reader. Then, the physical and personality characteristics of the characters were determined. In the third stage, the opinions of literature experts were consulted in the preparation of the script text. Discussions were held with visual arts and literature teachers on the narration of the manga and the comprehensibility of the subject was agreed upon. In the last stage, the

script prepared by the researcher was drawn in manga style. The script and drawing of the manga took about three months. This manga contains 232 frames.



Figure 2A few excerpts from the manga "Interdimensional mission"

### Manga "Tayyar Rahmiye"

In order to convey our cultural values, the same researcher selected the story of Tayyar Rahmiye, one of the heroines of our liberation struggle, and prepared a short manga consisting of 18 frames in historical style. While preparing the script of the manga, the websites named "Children Who Made History" (<https://www.tarihyazancocuklar.com.tr/tayyar-rahmiye/>) and "MEB Ders" (<https://www.mebders.com/dosya/19539-tayyar-rahmiye>) were used. The aim of this manga is to ensure the transfer of the values of Turkish culture through the art of manga, which is popular among young people.

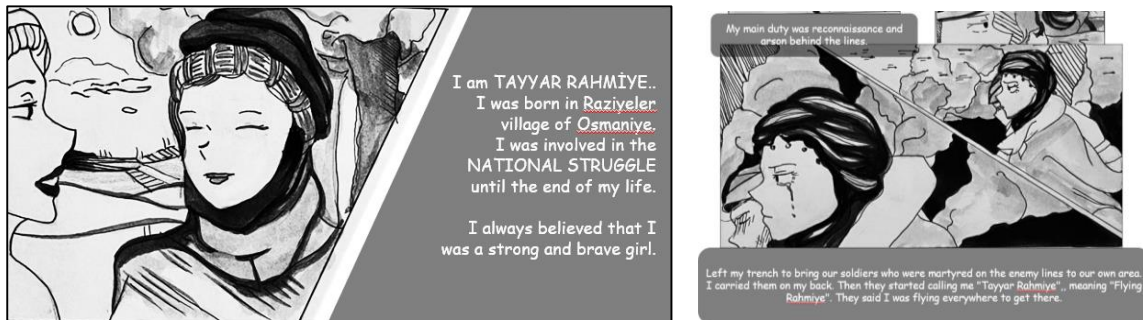




Figure 3 A few excerpts from the manga "Tayyar Rahmiye"

### Station technique

The manga prepared by the researcher were read to the experimental group and after discussions were made about the root values, a three-week (6-hour) workshop was held using the station technique. The station technique, which enables students to be active in the learning process, allows students to learn on their own and is based on group work, can include various simultaneous learning activities. Students take an active role in each group within the specified time in order to explore any subject or gain a skill (Duman, 2018) at the stations. In this context, the experimental group was divided into three groups and working areas were created for the three stations where posters will be applied at the first station, pictures at the second station, and scenario writing techniques at the third station. The activities are based on root values.



Figure 4 Application examples obtained by applying the station technique (Poster/picture)

Examples of paintings and posters produced by the students of the experimental group by applying the station technique are shown in Figure 4.





**Figure 5** Students working at their stations and reading the manga

Photographs of the experimental group students working at their stations and the reading of the manga are shown in Figure 5.

### **Analysis of data**

The quantitative data of the study were obtained from Rubrics. Since there are a total of 10 criteria and three levels of success in the rubrics prepared, the highest score that can be obtained is 30 and the lowest score is 0. The sum of the scores obtained from each criterion constitutes the student's score regarding the level of knowledge, perception and synthesis of the root values according to the applied DPA. The data obtained were examined for the effect of lost data and outlier values before the analysis. It was observed that there was no missing data and there was no outlier problem, and the testing of assumptions for the analysis was started. The reliability studies on the prepared Rubrics and the reliability studies on the scores obtained from the student data scored by two different raters are given in the findings section. Analyses of Rubrics were performed with SPSS 29 and Jamovi 2.4.6 program.

The qualitative data obtained from the opinion form were analyzed by content analysis technique. Content analysis is defined as a systematic, repeatable technique in which some words of a text are summarized with smaller content categories with coding based on certain rules. In content analysis, the researcher analyzes the existence of concepts, their meaning. Then, the researcher makes inferences about the messages in the data (Büyüköztürk et al., 2019). The reliability of the analyzes was ensured in two ways. First, the data collected during this study were independently coded by the researchers, the codes created by the researchers were compared, and the situations in which the researchers conflicted were re-evaluated and the codes were finalized. The reliability of the data analysis made in this way; It was calculated using the formula  $[(\text{Consensus}) / (\text{Consensus} + \text{Disagreement})] \times 100$  (Miles & Huberman, 1994). The mean reliability coefficient among the coders was found to be 84% in the first round. After this process, the coders came together and re-evaluated the content with intransigence, and then the average reliability coefficient was found to be 100% in the second round. Secondly, after comparing two separate analyses, the category and code list was

examined by the measurement and evaluation and field expert in order to confirm the process with the observer triangulation method (Denzin, 1978).

## RESULTS

### Findings on the scope validity of rubrics

The validity of the measurement tool refers to how accurately the tool measures the targeted characteristics. In this study, the opinions of field experts were consulted in order to evaluate the validity of the Rubrics developed. In this context, three experts from the field of Visual Arts, an assessment and evaluation expert and a Turkish Language and Literature expert were asked to evaluate the scope validity (content, structure and criteria) of the draft Rubrics. Opinions were taken from the experts about the content, structure and criteria in accordance with the purpose and scope. For expert opinions, the following equation proposed by Miles-Huberman (1994) has been noted:

$$Reliability = \frac{Consensus}{(Consensus+Disagreement)} \times 100$$

The percentage of concordance obtained as a result of this calculation is considered reliable if it is over 70% (Miles & Huberman, 1994). The usefulness of the draft Rubrics, the clarity of the criteria and the appropriate expression of the levels were taken from three experts (two in the field of visual arts and one in the field of measurement and evaluation) and it was seen that the percentage of agreement between the expert opinions was 85% in the first round and 100% in the second round after the necessary corrections. The corrections made are in the form of word changes for meaning, suggestions for separating levels with repetitive expressions, and corrections related to ratings. Thus, the form was finalized in line with expert opinions (Annex 1).

### Statistics on Rubrics

The lowest score that can be obtained from each sub-dimension of the Rubrics is "0", while the highest score is "3". In general, it is seen that the scores of the students are high both from each sub-dimension and from the entire rubric. The averages of the scores given by the raters in each sub-dimension were examined and it was seen that they were close to each other. When the skew-kurtosis values of the scores were examined, it was found that the scores showed a slight skewed distribution to the left. However, the findings regarding the consistency of the total scores given by the raters are presented in Table 3.

**Table 3** Spearman–Brown Correlation Coefficient for the total score obtained from Rubrics

Second rater	Spearman's Rho	First rater
		0.923*
	<i>p</i>	.000
	N	30

\* $p < 0.01$

When Table 3 was examined, a positive, high and significant correlation was found between the total scores given by the two raters ( $Rho = .923$ ,  $p < 0.01$ ). If the Rho coefficient (Spearman correlation) is greater than .70, it indicates a high level of relationship (Büyüköztürk, 2007). This shows that the Rubrics prepared are sufficiently reliable (Knoch, 2009; Şencan, 2005).

In Table 4, the concordance between the scores of the two raters was determined by Cohen's Kappa analysis according to the sub-criteria.

**Table 4** Cohen's Kappa results of the two Raters on the sub-criteria scores of the Rubrics

Sub-Criteria	Cohen's Kappa
Level of Knowledge	0.926
Level of Perception	0.876
Synthesis Level	0.915

In Table 4, it is seen that the Cohen's Kappa values obtained from each sub-measure ranged from 0.876 to 0.926. It can be said that these results are perfect concordance (Büyüköztürk, 2007; Nunnally & Bernstein, 1994). When these values are examined together, it can be said that Rubrics are a reliable scoring key. After this stage, the data obtained from the data collection tool were analyzed according to the research subjects and the answers were found as follows.

***Sub-Problem 1. Is there a significant difference between the "knowledge level" pre-test scores of the experimental and control groups?***

Before analyzing the results of whether there is a significant difference between the knowledge level and pre-test scores of the experimental and control group participants, the score distributions are given descriptively in Table 5.

**Table 5** Value-Based Knowledge Level Rubric (VBKLR) Pre-Test Scores of Experimental and Control Group Participants

Values	Experimental Group VBKLR			Control Group VBKLR		
	N	$\bar{x}$	Std. D.	N	$\bar{x}$	Std. D.
Patriotism	30	1.8	0.61	30	1.9	0.48
Respect	30	1.63	0.61	30	1.53	0.57
Love	30	1.4	0.62	30	1.27	0.45
Responsibility	30	1.43	0.5	30	1.63	0.56
Benevolence	30	1.4	0.49	30	1.47	0.51
Justice	30	1.57	0.5	30	1.63	0.61

Honesty	30	1.9	0.4	30	2.00	0.45
Friendship	30	1.57	0.57	30	1.50	0.63
Patience	30	1.53	0.57	30	1.60	0.49
Self-control	30	1.7	0.59	30	1.80	0.40
<b>Sum</b>	<b>30</b>	<b>15.93</b>	<b>3.02</b>	<b>30</b>	<b>16.33</b>	<b>1.69</b>

When the scores obtained from Table 5 were examined, it was seen that the lowest average score of the experimental group students from the VBKLR pre-test was in the dimensions of love and benevolence, and the highest average score was in the dimension of honesty. The mean score from the knowledge level dimension is 15.93. When the results are interpreted, it can be said that the level of knowledge of the experimental group students about root values is at an average level. When the pre-test scores of the control group students were examined, it was seen that the lowest mean score was in the dimension of love, and the highest average score was in the dimension of honesty. The average score was 16.33. It can be said that the level of knowledge about root values in the control group students is at an average level.

Before starting the analysis, it was tested whether the available data met the normality assumptions. For this purpose, skewed-kurtosis coefficients, kolmogorov smirnov and Q-Q plot results were examined. It was observed that the data were normally distributed and the analyzes were continued with parametric tests. Independent sample t-test was used to compare the pretest mean scores of the experimental and control groups from the VBKLR pretest rubric. The results obtained are presented in Table 6.

**Table 6** Comparison of Experimental and Control Group Students' Value-Based Knowledge Level Rubric (VBKLR) Pre-Test Score Mean Score

Group	N	$\bar{x}$	Sd	t	Sd	p	d
Experiment	30	15.93	3.02	-0.63	58	.009	0.16
Control	30	16.43	1.81				

The results of the analysis in Table 6 revealed that the pre-test scores of the VBKLR pre-test rubric of the experimental and control group students participating in the study were significantly different from each other ( $t = -.63, p < .05$ ). When the arithmetic means and standard deviation values of the scores obtained by the students from the VBKLR pretest rubric were examined, it was seen that the scores of the control group students regarding the root values were significantly higher than the experimental group students. According to the effect size value obtained, it can be said that this difference has a small effect.

**Sub-Problem 2.** *Is there a significant difference between the "knowledge level" post-test scores of the experimental and control groups?*

Before analyzing the results of whether there is a significant difference between the pre-test scores of the knowledge level of the experimental and control group participants, the score distributions are given descriptively in Table 7.

**Table 7** Value-Based Knowledge Level Rubric (VBKLR) Posttest Scores of Experimental and Control Group Participants

Values	Experimental Group			Control Group		
	VBKLR			VBKLR		
	N	$\bar{x}$	Std. D.	N	$\bar{x}$	Std. D.
Patriotism	30	2.43	0.5	30	1.8	0.66
Respect	30	2.27	0.58	30	1.63	0.72
Love	30	2.03	0.56	30	1.2	0.71
Responsibility	30	2.2	0.61	30	1.53	0.63
Benevolence	30	2.1	0.55	30	1.43	0.68
Justice	30	2.4	0.56	30	1.40	0.50
Honesty	30	2.5	0.51	30	1.57	0.57
Friendship	30	2.37	0.56	30	1.67	0.76
Patience	30	2.2	0.48	30	1.40	0.62
Self-control	30	2.33	0.55	30	1.60	0.62
Sum	30	22.83	3.10	30	15.23	4.03

When the scores obtained from Table 7 were examined, it was seen that the lowest average score of the experimental group students from the VBKLR pre-test was in the dimensions of love and benevolence, and the highest average score was in the dimension of honesty. The mean score obtained from the VBKLR dimension is 22.83. When the results are interpreted, it can be said that the level of knowledge of the experimental group students about root values is at an average level. When the VBKLR post-test scores of the control group students were examined, it was seen that the lowest mean score was in the dimension of love, and the highest mean score was in the dimension of honesty. The average score was 15.23. It can be said that the level of knowledge about root values in the control group students is at an average level.

Independent sample t-test was used to compare the posttest mean scores of the experimental and control groups from the VBKLR posttest rubric. The results obtained are presented in Table 8.

**Table 8** Comparison of Experimental and Control Group Students' Value-Based Knowledge Level Rubric (VBKLR) Post-Test Score Mean Score

Groups	N	$\bar{x}$	sd	t	df	p	d
Experiment	30	22.27	3.31	8.46	58	.002	2,19
Control	30	16.43	1.81				

The results of the analysis in Table 8 revealed that the VBKLR post-test scores of the experimental and control group students participating in the study were significantly different from each other ( $t = 8.46$ ;  $p < .05$ ). When the arithmetic means and standard deviation values of the scores obtained by the students from the VBKLR post-test rubric were examined, it was seen that the scores of the experimental group students regarding the root values were significantly higher than the control



group students. According to the effect size value obtained, it can be said that this difference has a high level of effect.

**Sub-Problem 3. Is there a significant difference between the pre-test and post-test scores of the experimental and control groups, "Value-Based Knowledge Level Rubric (VBKLR), Manga-Based Depth of Perception Rubric (MBDPR), Manga-Based Synthesis Competency Rubric (MBSYCR)"?**

Dependent samples t-test was used to compare the Value-Based Knowledge Level Rubric (VBKLR) pre-test and post-test mean scores of the experimental group. The results obtained are presented in Table 9.

**Table 9** Comparison of Pre-Test-Post-Test Mean Scores Obtained from Value-Based Knowledge Level Rubric (VBKLR) of Experimental and Control Group Students

Groups	Tests	N	$\bar{x}$	S	sd	t	p	d
<b>Experiment</b>	Pre-Test	30	15.9	3.02	29	-10.41	0.000	1.98
	Final Test	30	22.23	3.37				
<b>Control</b>	Pre-Test	30	15.07	2.56	29	-0.271	0.788	
	Final Test	30	15.23	4.03				

The results of the analysis in Table 9 revealed that the VBKLR pre-test and post-test scores of the experimental group students participating in the study were significantly different from each other ( $t = -10.41$ ;  $p < .05$ ). When the arithmetic means and standard deviation values of the scores obtained by the students from the VBKLR pre-test and post-test are examined, it is seen that the post-test scores are significantly higher. The high effect size value obtained can be interpreted as an important result in terms of showing that the teaching process applied to the experimental group is effective.

**Sub-Problem 4. Findings regarding the experimental group's Manga-Based Depth of Perception Rubric (MBDPR) and Manga-Based Synthesis Competence Rubric (MBSCR) scores**

The descriptive statistics of the experimental group students participating in the study, expressing the arithmetic mean, standard deviation, minimum and maximum values of the MBDPR scores related to the root values are given in Table 10.

**Table 10** Descriptive statistical results of the scores obtained by the experimental group students on the Manga-Based Depth of Perception Rubric (MBDPR) according to the sub-dimensions

	N	$\bar{x}$	Std. D.	Min.	Max.
Patriotism	30	2.83	.39	2	3
Respect	30	1.97	.76	1	3
Love	30	2.23	.50	1	3
Responsibility	30	2.70	.47	2	3
Benevolence	30	2.13	.63	1	3
Justice	30	1.83	.65	1	3

Honesty	30	2.00	.53	1	3
Friendship	30	2.03	.41	1	3
Patience	30	2.13	.43	1	3
Self-control	30	1.83	.79	1	3
<b>Sum</b>	<b>30</b>	<b>21.70</b>	<b>2.55</b>	<b>17</b>	<b>26</b>

When the scores obtained from Table 10 were examined, it was seen that the lowest mean score of the experimental group students in MBDPR was in the dimensions of justice and self-control, and the highest average score was in the dimension of patriotism. The average score obtained from the entire MBDPR is 21.70. When the score is interpreted, it can be said that the perception levels of the root values of the experimental group students are "Successful".

The descriptive statistics of the experimental group students participating in the study, expressing the arithmetic mean, standard deviation, minimum and maximum values of the scores of the MBSCR rubric regarding root values are given in Table 11.

**Table 11** Descriptive statistical results of the scores obtained by the experimental group students on the Manga-Based Synthesis Competence Rubric (MBSCR) according to the sub-dimensions

	N	$\bar{x}$	Std. D.	Min.	Max.
Patriotism	30	2.80	.41	2	3
Respect	30	2.60	.50	2	3
Love	30	2.60	.56	1	3
Responsibility	30	2.43	.57	1	3
Benevolence	30	2.43	.50	2	3
Justice	30	2.50	.63	1	3
Honesty	30	2.70	.53	1	3
Friendship	30	2.43	.68	1	3
Patience	30	2.40	.67	1	3
Self-control	30	2.43	.68	1	3
<b>Sum</b>	<b>30</b>	<b>25.33</b>	<b>2.71</b>	<b>18</b>	<b>30</b>

When the scores obtained from Table 11 were examined, it was seen that the lowest mean scores of the experimental group students from MBSCR were in the dimensions of responsibility, benevolence, friendship and self-control, and the highest average score was in the dimension of patriotism. The average score obtained from the entire rubric is 25.33. When the score is interpreted, it can be said that the synthesis levels of the root values of the experimental group students are "Successful".

**Sub-Problem 5. What are the participants' views on the use of Manga as an alternative instructional design in values education?**

**Findings from the Student Testimonial Form**

In order to find out whether the root values in the manga named "Interdimensional task" were perceived by the participants, the manga was first read to the experimental group and then the opinion form was applied.

**Table 12** Management of qualitative data set

Expression	What the phrase stands for
OF, 9 <sup>th</sup> G. S8	<i>Opinion Form, 9<sup>th</sup> Grade, student number 8.</i>
OF, 11 <sup>th</sup> G. S15	<i>Opinion Form, 11<sup>th</sup> Grade, student number 15.</i>

The findings obtained from the opinion form are as shown in Table 13:

**Table 13** Answers to the question "Specify the root values that caught your attention in the manga you have read."

	Values	Grade 9	Grade 11	Sum	Percent
		f	f	f	%
<b>Indicate the root values that caught your attention in the manga you have read.</b>	Patriotism	15	15	30	100
	Love	15	14	29	96,6
	Respect	12	11	23	76,6
	Benevolence	14	12	26	86,6
	Honesty	10	12	22	73,3
	Patience	14	12	26	86,6
	Responsibility	13	15	28	93,3
	Justice	5	10	15	50
	Friendship	13	13	26	86,6
	Self-control	11	7	18	60

According to Table 13, when the frequency and percentage values of the root values that attracted the attention of the experimental group were examined, it was seen that the percentages of patriotism, love, benevolence, patience, responsibility and friendship values were higher than 85%. It is seen that the percentages of the root value of self-control and justice are less. If a general evaluation is to be made, it can be said that the root values in the manga are perceived by the participants at different rates.

**Table 14** "How are the root values in the manga you are reading described? Explain for each value."

Theme	Sub-theme	f	Example statement(s)
	The value of patriotic in the manga	30	"... Ülgen's defense of his world (OF, 11 <sup>th</sup> G.,S1)." "... Ülgen's saving of millions of people (OF, 11 <sup>th</sup> G.,S9)." ".. Ülgen's struggle for his country and its people (OF, 11 <sup>th</sup> G.,S13)...."
	The value of respect in the manga	23	"... Ülgen's respect for her mother (OF, 11 <sup>th</sup> G., S6)." "... Respect is expressed in terms of disrespect (OF, 11 <sup>th</sup> G.,S5)." ".. Lack of respect for Ülgen at the conference (OF, 11 <sup>th</sup> G., S3)...."
	The value of love in the manga	29	"... Ülgen's love for his homeland, his family, and humanity (OF, 11 <sup>th</sup> G., S3)..." "... It is a very good example of love when he remembers his first mother when he becomes aware of the situation (OF, 11 <sup>th</sup> G., S5).." "... Ülgen's love for people and her mother, so she goes to rescue them (OF,9 <sup>th</sup> G., S10).." "... The child takes responsibility after a momentary situation, and when the reasons arise after the scene of denying power, he takes responsibility (OF, 11 <sup>th</sup> G., S2)...."
Expression of values in manga	The value of responsibility in the manga	28	"... Ülgen's responsibility towards people (OF, 11 <sup>th</sup> G., S13).." "... Placing the responsibility of all people on Ülgen (OF, 9 <sup>th</sup> G., S13).."
	The value of benevolence in the manga	26	"...Ülgen's help to people (OF, 11 <sup>th</sup> G., S4)..." "... Mergen's help to Ülgen (OF, 11 <sup>th</sup> G.,S 9).." "...The main character's effort to save people (OF, 9 <sup>th</sup> G.,S1).." "...Ülgen's efforts to prevent people from dying (OF, 9 <sup>th</sup> G., S8).." "... I don't think there was any justice, in fact it was tried to be given

			<i>through injustice (OF, 11<sup>th</sup> G., S5).."</i>
The value of justice in the manga	15		<i>"... Giving special power to Ülgen to be fair. (OF, 11<sup>th</sup> G., S14).."</i> <i>"... Ülgen helped all the people. (OF, 9<sup>th</sup> G., S15).."</i> <i>"... Erlik clearly states all his plans (OF, 11<sup>th</sup> G., S14).."</i> <i>"... The betrayal of the Angel (OF, 11<sup>th</sup> G., S2).."</i>
The value of honesty in the manga	22		<i>"... Melek's lying to Ülgen (OF, 9<sup>th</sup> G., S2).."</i> <i>"... The dishonesty of the villain's messenger who comes to the protagonist (OF, 9<sup>th</sup> G., S12).."</i> <i>"... The friendship of Erlik and Mergen (OF, 11<sup>th</sup> G., S3).."</i> <i>"... The friendship of Erlik and Kizagan (OF, 11<sup>th</sup> G., S15).."</i>
The value of friendship in the manga	26		<i>"... The old friendship of enemies (OF, 9<sup>th</sup> G., S4).."</i> <i>"... Friends quarrelling (OF, 9<sup>th</sup> G., S7).."</i>
The value of patience in the manga	26		<i>"... Ülgen waits until he is 37 years old (OF, 11<sup>th</sup> G., S10).."</i> <i>"... The people waiting for Ülgen to come and the waiting for Ülgen to have a sense of responsibility (OF, 11<sup>th</sup> G., S1).."</i> <i>"... Erlik's wandering in all universes and waiting to become immortal (OF, 9<sup>th</sup> G., S10).."</i>
The value of self-control in manga	18		<i>"... Although Ülgen's determination is very contradictory to its initial state, it continues with determination (OF, 11<sup>th</sup> G., S5).."</i> <i>"... It is a good example of self-control that our character continues to struggle without giving up (OF, 9<sup>th</sup> G., S5).."</i> <i>"... Ülgen's self-questioning when he forgets what he has memorized (OF, 9<sup>th</sup> G., S8).."</i>

The answers given by the experimental group regarding their perception of the root values in the manga are classified on the basis of each root value in Table 14. In the table, the expressions of the experimental group in which they define the root values in the manga with their own expressions are included. When the findings are evaluated, it can be said that all root values are included in the original manga designed over 232 squares.

**Table 15** Answers to the question "Are the root values adequately expressed in the manga you are reading?"

Theme	Sub-theme	f	Example statement(s)
Expressing root values in manga	Understated	17	<i>"... In terms of the length of the manga, some parts are processed quickly, but it is very good (OF, 9<sup>th</sup> G., S5).."</i> <i>"... It has been adequately expressed, especially Ülgen's desire to save the world is a very good example of cooperation, love of country and love (OF, 9<sup>th</sup> G., S8).."</i> <i>"Basically, it's based on a sense of responsibility. Other root values remained in the background and were explained indirectly (OF, 11<sup>th</sup> G., S1).."</i> <i>"... Yes, it has been sufficiently stated, Ülgen is given a responsibility based on patriotism (OF, 11<sup>th</sup> G., S14).."</i>
	Partially expressed	13	<i>"... I had a hard time finding some root values that were not adequately expressed (OF, 9<sup>th</sup> G., S2).."</i> <i>"... Some of them were difficult to understand because the events were moving quickly (OF, 9<sup>th</sup> G., S12).."</i> <i>"... Halfway through, the responsibility was evident enough (OF, 11<sup>th</sup> G., S2).."</i> <i>"... Different sections should be added to the subject of fairness, honesty and self-control (OF, 11<sup>th</sup> G., S11).."</i>

Table 15 shows the opinions of the experimental group on whether it is sufficient to express the root values in manga. According to this table, more than half of the participants find manga sufficient in terms of all root values. The findings show that the original manganese is sufficient for most of the root values.

**Table 16** Answers to the question "Do you think manga are useful for transferring root values?"

Theme	Sub-theme	f	Example statement(s)
Benefits of transferring root values in manga	Useful	20	"... Yes, if there is a medium that can explain literary issues, the root values can be transferred in any way (OF, 11 <sup>th</sup> G., S2)..."
			"... I think it's useful (OF, 11 <sup>th</sup> G., S8)..."
			"... In general, yes (OF, 11 <sup>th</sup> G., S9)..."
It doesn't help	7	3	"... Yes, because root values can be explained with simple subjects (OF, 11 <sup>th</sup> G., S13)..."
			"... I think it's useful because manga, Japanese culture values (OF, 11 <sup>th</sup> G., S14)..."
			"... I think it's useful because manga, Japanese culture values (OF, 11 <sup>th</sup> G., S14)..."
I'm undecided	3	3	"...I think it is useful, one is influenced by what one reads (OF, 11 <sup>th</sup> G., S12).."
			"... In general, it is well explained (values). (OF, 11 <sup>th</sup> G., S9)..."
			"... Yes, I think, people can reveal their thoughts and gain different perspectives by reading (OF, 11 <sup>th</sup> G., S3)..."
Benefits of transferring root values in manga	Useful	20	"... Since the number of people reading manga is low in Turkish culture, it may not be very effective, but it would be effective if the number of readers increased (OF, 11 <sup>th</sup> G., S7)..."
			"... Yes, I think it's useful because it conveys different events in a different way through the eyes of each character (OF, 11 <sup>th</sup> G., S11)..."
			"... Yes, I think, it can explain values in a simple way by making them interesting (OF, 11 <sup>th</sup> G., S15)..."
			"... Yes, it enables us to adopt values (OF, 9 <sup>th</sup> G., S1)..."
			"... Yes, I am influenced by the manga I read (OF, 9 <sup>th</sup> G., S11)..."
			"...I think because it makes you think deeply in a fun way (OF, 9 <sup>th</sup> G., S3)..."
			"... I think because it includes more than one root value (OF, 9 <sup>th</sup> G., S4)..."
			"... Since manga is a type of art in which visual elements are predominantly used, emotions are conveyed very well (OF, 9 <sup>th</sup> G., S5)..."
			"... If the goal is only to convey value, it can be embodied a little more, but if you want it to be read and convey value at the same time, it was really nice (OF, 9 <sup>th</sup> G., S6)..."
			"... I think because the bond to the homeland was very strong in this manga (OF, 9 <sup>th</sup> G., S7)..."
			"... I find it useful because telling values through manga, which is a genre that young people love, attracts more attention of young people (OF, 9 <sup>th</sup> G., S8)..."
			"... Most values are transferred, in a useful way (OF, 9 <sup>th</sup> G., S9)..."
			"... Yes, because I think it's more clearly stated in manga (OF, 9 <sup>th</sup> G., S10)..."
			"...I don't think so, frankly, because there is prejudice against manga (OF, 11 <sup>th</sup> G., S5)..."
			"... No, because manga is not read in our culture (OF, 11 <sup>th</sup> G., S6)..."
"... I'm just watching it for the pleasure of watching (OF, 11 <sup>th</sup> G., S10)..."			
"... I don't think the purpose of reading manga is to discern root values (OF, 11 <sup>th</sup> G., S1)..."			
Benefits of transferring root values in manga	Useful	20	"...I find it somewhat useful (OF, 11 <sup>th</sup> G., S11)..."
			"... Because it was the first time I read manga (OF, 9 <sup>th</sup> G., S1)..."
			"... Since I am not a manga reader, I am biased against the fact that feelings and thoughts can be conveyed through manga (OF, 11 <sup>th</sup> G., S4)..."

Table 16 shows the opinions of the experimental group on whether manga are useful in transferring root values. According to this table, two-thirds of the participants state that the squads are successful in transferring root values. Only three members of the experimental group stated that manga was not useful in conveying values. The findings suggest that manga may be useful in transferring root values.

## CONCLUSION, DISCUSSION AND RECOMMENDATIONS

Values education, which is one of the current education topics, comes to the fore with the increase in social problems in world societies and the increase in negative behaviors accordingly (Kurtdele-Fidan and Öner, 2018). It has become a necessity to raise individuals who are not the source of such problems and who can produce solutions to such problems. In line with this need, BOE (2017) has carried out curriculum studies to transfer root values to secondary school students. This research examines the effect of the use of manga in values education on the level of knowledge, perception and synthesis skills of secondary school students about root values. The original manga prepared in this research were used as a tool for the discussion and transfer of root values. The students first defined the root values and then discussed the root values through the squads. Finally, they expressed the root values through manga with their own fictions, that is, they synthesized them. This process was analyzed with VBKLR, MBDPR, MBSCR and Opinion form data. The results of the research are as follows:

1. We found that there was a significant difference between the pre-test scores of the control and experimental groups, but the effect of this difference was limited. According to the effect size value obtained, it can be said that this difference has a small effect.

2. We found that the post-test scores of the students in the experimental group in terms of root values were significantly higher than those of the students in the control group. The high effect size value obtained can be interpreted as an important result in terms of showing that the teaching process applied to the experimental group is effective. Murakami and Bryce (2009) say that manga are often based on accurate information from careful research and provide readers with high literary value and intellectual stimuli. He also mentions that manga are a safe educational tool Yağ (2013) suggested that cartoons/animations teach children universal and national values by having fun. Özdemir et al. (2022) stated that the use of comic book technique can contribute to teaching national history and raising awareness of citizenship.

Comics have a history of more than 100 years and are able to combine literature and plastic arts. When fully researched, it is seen that words and visuals have great power to tell stories and convey messages. This makes comics an effective pedagogical tool (Rota and Izquierdo, 2003). The messages of comics and manga are often clear. Manga can be a source of learning about values (Avriarno et al., 2022). Murakami and Bryce (2009) stated that manga explicitly or implicitly informs readers about value and entertains readers with engaging stories. It is also mentioned that manga are focused, distributing accurate information in specific areas, acting as guides, being entertaining and educational at the same time. Tanaka (2021), in his research titled "A new approach to the culture of teaching and learning in modern society: An example of an educational practice in Japan", gives an

example of the use of Japanese manga in social studies lessons aimed at building a democratic society. Tanaka says that this practice is a model of cultural work that guides to contribute to the development of values in students through manga. Different studies in the literature (Aşçı, 2020; Topkaya, 2016; Özdemir et al., 2022) found that manga and comics are effective in transferring values. The aforementioned researches reveal the contribution of manga to values education and coincide with the results of our research.

**3.** When the scores of the experimental and control groups from the VBKLR pre-test and post-test are examined, it is seen that the post-test scores are significantly higher. This result suggests that the participants' learning levels of root values at school or in the family are similar.

**4.** As a result of the content analysis conducted to determine the opinions of the participants on the use of manga as an alternative teaching design in values education; The root values in the manga were perceived by the participants at different rates, all the root values were included in the original manga designed over 232 squares, more than half of the participants found the manga sufficient in terms of all root values, the original manga was sufficient in terms of most of the root values. It was concluded that the participants mostly stated that the squads were successful in transferring root values. Therefore, it can be said that manga can be successful in transferring root values.

As a result of the research conducted by Topkaya et al. (2023), in which they examined comics as educational material, the visuals and dialogues in the comics; speed reading skills, reading habits, reading motivation, problem-solving skills, empathy skills, improves reading comprehension skills, reveals the importance of empathetic feelings, makes you understand the importance of effective speaking and active listening, increases the rate of active participation in the lesson, makes the lesson fun. and that it positively affects the ability to listen to the lesson effectively. A comic book series that is suitable for the subject and has been successfully created with visual and text balance will make it easier for students to make sense of the subjects. Comics have an important place in teaching subjects that cover the field of affective learning such as effective citizenship education, values education, and democracy education, especially in social studies teaching, by embodying them both in writing and visually (Kaya et al., 2023).

Speech bubbles in manga can be easily transformed into a tool that can be used in training (Ari et al., 2019). Zimmerman (2008) advised educators that speech or thinking bubbles on comics can be left blank and students can be asked to fill in these gaps. Students can actively participate in the educational process by using their imagination to fill in the gaps between pictures in the comic book (Rota and Izquierdo, 2003). Therefore, it is thought that the manga prepared and the applied MBSCR created a good space for the experimental group to create their own root value stories.

It is concluded that the experimental group can perceive the root values in the manga prepared by the researcher at a good level. In the literature, there are studies examining the existence of values in cartoons/animations and conveying them to the audience in an implicit way (Özyürek et al. 2018; Şentürk and Keskin, 2019; Kaymak & Okur Özçelik, 2020). In addition, there are studies investigating that manga and anime/cartoons/cinema contain root values (Albayrak & Kartal, 2020, Ceylan-Dadakoğlu et al., 2022; Hakkoymaz, 2021; Ünal, 2020). However, there is no study in the literature examining the use of manga as a means of transmission in values education. From this point of view, it is thought that this research will provide a perspective on the transfer of root values through manga.

The aforementioned research's thoughts that manga can be a tool in teaching abstract concepts support the result of our research. Manga are generally known for their complex characters, deep stories containing universal values, and various thematic elements. These features show that manga series go beyond being just entertaining media products and have the potential to contribute to the moral and social development of young people. For example, Murakami and Bryce (2009) mention that manga are strongly hybrid narratives that interdependently integrate verbal and visual texts to depict and interrogate various issues in our daily lives. Mangas can engage students with different learning styles and can stimulate multiple senses at the same time, helping them practice basic skills such as reading, understanding visual concepts, and speaking. It can also teach your students about the cultural issues around them through comics. Through comics, students can be encouraged to think about the subject and come up with logical arguments to help them make sense of what they feel (Anderson, 2019). The number of studies on manga that have been suggested to produce such powerful effects is increasing rapidly. In this research, where manga is used as a tool to transfer root values, it is concluded that manga can be used as an alternative transfer tool in values education.

### **Limitations**

This study has several limitations. First, it is limited to the prepared manga drawings and the values represented in these drawings. The second is limited to the study group consisted of a total of 60 students in the ninth and eleventh grades of a high school in a central city in Central Anatolia. Third, it is limited to data were collected using researcher-developed rubrics and opinion forms. The fourth limitation is the application time.

### **Suggestions**

- In addition to the theoretical expression of root values, it is recommended to turn to alternative tools (e.g. manga/comics/cartoons/anime) in values education.



- It is recommended to use manga developed under the supervision of field experts for the narration and transfer of all root values, national and spiritual values in the manga we have prepared as an example.

- Since the involvement of the student in the process will facilitate the internalization of the root values, the prepared manga should be designed to include the parts for discussion and evaluation, and the reader should be able to evaluate the root values he has learned in various ways.

- It is recommended that root values should be given as a separate applied course starting from the preschool period. In this practical course, it is thought that manga can be used as an alternative and important tool.

- It is recommended that students internalize the root values by making their own original manga-anime-comic-animation, etc. products in Visual Arts and Computer courses.

- It is suggested that the effectiveness of manga in teaching values should be tested with larger samples and quantitative research.

### **Acknowledgement**

We would like to express our gratitude to Asu Hande Eken, the valuable illustrator of the manga named "Interdimensional Mission" and "Tayyar Rahmiye", which we used in our research, and to the experimental and control group students who contributed greatly to our research with their applications.

### **Ethical issues**

In this study, all the rules specified to be followed within the scope of the "Higher Education Institutions Scientific Research and Publication Ethics Directive" were followed. The study was approved by the Ankara Yenimahalle District Directorate of National Education Research Commission with the number E-68191173-604.01.02-65432525 dated 09.12.2022.

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