

Research Article

Effectiveness of the differentiated instructional design for value education of gifted: a mixed study

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Abstract

The aim of this study was to examine the efficiency of the differentiated instructional design for value education of gifted. This research was based according to the embedded experimental design of a mixed research method. The study group consisted of 25 gifted students (13 girls, 12 boys) at the 6th-grade level. Digital differentiation strategy was employed in instructional design. Students were asked to reflect their learning about Turkish talented people on cartoons containing both visual and auditory elements. The activities in the differentiated instructional design were applied to the students online for 8 weeks, 2 hours per week. Quantitative data were collected with the Target Behaviour Development Scale (Kanger, 2007). Quantitative data were analyzed with a dependent samples t-test. The Cohen d effect size was also calculated. In the qualitative part of this research, the views of gifted students, their products, the observations of researchers were evaluated. Qualitative data were analyzed descriptively. As a result of the research, the difference between the pre-test and post-test scores of the target behavior development levels of the gifted students regarding values was found to be statistically significant. This difference was in favor of the post-test and the effect size was high ($d=1.047$, $p<.05$). In other words, the differentiated instructional design for value education increased the values development of gifted students. Gifted students expressed their views on the differentiated instructional design the most frequently with the words "fun, instructive, and the values". The students were successful in writing cartoon scripts, turning the scripts into a cartoon, and indicated that they had some technical difficulties. Students were happy both to learn of the values and to produce technology-supported products. Comparative studies can be done by establishing experimental and control groups for different grade-level gifted students.

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Introduction

Since the inception of the gifted education field, the focus has been on the development of the individual competence, intelligence, and creativity rather than the social and global context in which the individual grows and comes to be. However, people's lives are intricately interconnected. An individual's actions, no matter how small, can have huge impacts on other individuals, societies and nature (Chowkase, 2022). Current studies, research and practices in the field of gifted education focus on supporting gifted students' socio-emotional development (Cash & Lin, 2021; Cavilla, 2019; Cross, 2021; Hebert, 2020; Hebert & Smith, 2018; Wallace & Shaughnessy, 2012), and then being social capital by supporting their moral development (Renzulli, 2020; Renzulli & D'Souza, 2014; Renzulli & Reis, 2021), being wise people (Stenberg, 2021; Stenberg et al. 2021; Sternberg & Glück, 2022).

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Gifted people contribute to the production of new information and help to transmit the knowledge of humanity to future generations (Chowkase & Watve, 2021). For this reason, the education of gifted students should be approached with care. During the realization of educational activities in schools, the individual differences of these students emerge. Individual differences are more evident in the form of learning levels or speeds, and these individuals with differences need to be provided with special education services in line with their interests and cognitive abilities (Heacox & Cash, 2020; Kaplan, 2021; VanTassel-Baska, Hubbard & Robbins, 2021). Along with cognitive abilities and interests, moral and character traits of gifted students should also be taken into account in educational practices (Berkowitz & Hoppe, 2009; Renzulli, 2020; Stenberg et al. 2021; Walton & Vialle, 2021).

The moral interests and sensitivities of gifted children develop at an earlier age in direct proportion to their intelligence level (Silverman, 1994, cited in Kurnaz, 2018). Silverman states that he was influenced by the moral sensitivities of the gifted students he had followed for more than thirty years. There are dozens of cases of gifted students protecting and befriending their friends with special needs, conserving natural resources, getting upset when a classmate is destroyed, believing that all forms of violence are morally wrong and refusing to fight, writing letters to the authorities to end the war (Silverman, 1994, as cited in Kurnaz, 2018). Gifted children have a strong desire to help others and to destroy evil and wars. They have a sense of justice. They have a desire to clear off evil, war, poverty and inequality. They have beliefs about achieving world peace (Gündüz, 2010; Özkan, 2013). Being emotionally oversensitive can cause their reactions to issues such as injustice in the society to be concerned and distressed. When they cannot solve these situations, they may become disappointed and become depressed (Bakan & Onat, 2020; Orman, 2020). Gifted students who have these sensitivities are at risk of being treated as if they are misfits and being pushed around in an environment that is insensitive to them (Hökelekli & Gündüz, 2004; Silverman, 1994, as cited in Kurnaz, 2018). For this reason, the approach of families, teachers and society to gifted students is also important. Care should be taken when arranging the learning environments of gifted students and communicating with them (Orman, 2020).

Gifted students inevitably surprise their teachers with their outstanding features from their peers. This situation reveals the false belief of many teachers that gifted children are perfect or should be perfect, that they can never make mistakes, and that they always embody values such as tolerance, respect, love and cooperation. These children may lack several of these values like their peers with normal abilities (Yıldırım, 2016). There is a belief that these children can be self-sufficient in the affective sense as well as in the cognitive sense. However, gifted students need special needs and attention in order to develop both their cognitive and psychological potentials (Özbay & Palancı, 2011). From a moral point of view, the fact that being gifted does not guarantee that he or she is in fact moral. Intelligence and social, emotional and pedagogical variables play important roles together in moral development (Gündüz, 2010). While they can use their special talents and intelligence for the benefit of the society, gifted students can also use their powers to the detriment of the society due to misdirections and learning. They may also have ethically problematic decisions (Hökelekli & Gündüz, 2013).

The ethically problematic decisions of gifted people not only affect themselves, but also all humanity. Decisions made by leaders who have made significant impacts in history (for example, Fatih Sultan Mehmet, Mustafa Kemal Atatürk, Adolf Hitler) are a reflection of their moral and character developments (Tortop, 2018). An European country with a high level of education dropped atomic bombs on Nagasaki and Hiroshima, causing great destruction and death. The gifted people who created these destructive technologies and policies have turned into monsters (Kenan, 2017; Maslow, 1996, as cited in Turgut Yıldırım, 2019). Edison, who made great contributions to humanity by inventing the light bulb, and Warner Von Braun, who found the v8 type bomb and caused very severe destruction, are also gifted people (Yıldırım, 2016). Assuming that the virus, which is the starting point of the Corona virus pandemic, which affects the whole world, is made by human hands in a laboratory environment, it can be thought that the person causing this situation is a gifted person in the field of molecular biology and genetics. The need for values education is quite clear in a society where wars, murders, perversions and exploitation are increasing day by day. It is also an important fact that gifted students should benefit more from the values education they need (Hökelekli & Gündüz, 2013; Yıldırım, 2016). Values education is needed for gifted students to increase their moral and spiritual level and to preserve their sensitivity about ethical rules, values, and moral rules (Hökelekli & Gündüz, 2004). Gifted children need a learning-teaching environment equipped with values that will guide them to exhibit positive behaviors, make humane and moral decisions (Renzulli, 2020). Unfortunately, there are not many studies, research, and practices to support the field of gifted education (Tortop, 2018).

In Turkiye, the education of gifted students is carried out in Science and Art Centers (SAC), which is an after-school enrichment program (Sak, 2014; Şahin, 2015, 2018). In SAC, gifted students spend a significant part of their time with learning activities planned for their interests, needs and abilities (Gür, 2017). Educational activities carried out with mutual interaction and group work also shape the value judgments of gifted students (Çoban, 2019; Tortop, 2018). As a matter of fact, in the SAC Directive, the educational services offered in SAC are aimed at gifted students:

“a) Adopting Atatürk's principles and reforms; b) adopting, protecting and developing the national, moral, humanitarian, spiritual and cultural values of their country; has the power of free and scientific thinking and a broad world view; raising and developing individuals who are leaders, constructive, creative and contributing to the development of the country, c) to be brought up as productive, problem-solving and self-realized individuals who combine scientific thoughts and behaviors with aesthetic values, to realize their talents and creativity at an early age and use them at the highest level”

“Values education is included at every stage of the education programs implemented in SAC” (Ministry of National Education of Turkiye [MNET], 2016, p.6). The values that are aimed to be adopted by the students in the educational practices to be carried out in SAC also coincide with the values that should be included in the education programs in the Values Education Directive published in 2015 (MNET, 2015, p.4). As a matter of fact, gifted students receive education at their schools together with their peers with normal ability level, apart from SAC. In this context, it is a positive situation that the normal education programs and the education programs applied in SAC overlap in terms of the values (love, respect, self-confidence, sensitivity, fairness, aesthetics, solidarity, protecting the cultural heritage, self-sacrifice, etc.) that are aimed to be gained by all students. Of course, gaining these values should start in the family first, and the values gained in the family should be reinforced in SAC and the schools. Values education carried out in this way will gain a permanent and real meaning in the lives of gifted students (Hökelekli & Gündüz, 2004, 2013). Families of gifted students also want their children to reinforce moral, national and universal values in SAC (Sezer, 2016). In SAC, only science and mathematics lessons and cognitive development should not be prioritized, and moral, national and universal values should be included in educational practices. In order for values to be transformed into behavior, they must be completed cognitively and affectively (Akbaş, 2004). It is thought that gifted students, who are a great social treasure, will contribute to the peace and happiness of humanity thanks to suitable development environments and appropriate educational practices that will contribute to values education (Gündüz, 2010).

Educational practices to be carried out with gifted students should focus on high-level thinking skills, allow students to learn to think and work individually or in groups on texts, resources and various materials (Sak, 2014; Şahin, 2015, 2018; Tucker et al. 1997; Tortop, 2015; Türkman, 2017; VanTassel-Baska & Stambaugh, 2006). The common feature of learning-teaching activities that increase the learning of gifted students is that they integrate the skills and techniques that can improve their high-level thinking skills and they are of high quality (Türkman, 2017). A quality educational activity; a. is interesting to the student, b. encourages students to think at higher levels of thinking, c. enables students to use their knowledge, skills and understanding, to perceive how they are related to each other, and thus to make the best sense of their thoughts and knowledge (Tomlinson, 2015). It is thought that values education activities to be carried out with gifted students should also be quality educational activities. Quality educational activities can be at the center of the education programs to be developed for gifted students, as well as at the center of the studies on the differentiation of the curriculum (Maker, 1982a,b akt. Tucker et al. 1997; VanTassel-Baska & Stambaugh, 2006). In differentiated instructional designs, it is possible to adapt the general curricula according to the individual characteristics of gifted children, to diversify them according to their learning profiles, and to enrich them in a way that will increase their interest and motivation (Avci & Bal Sezerel, 2018). The basis of differentiated teaching practices is the development and implementation of challenging educational activities and teaching strategies that will increase students' learning (Emir & Yaman, 2017).

VanTassel-Baska (2003), identifies six strategies that promote openended, interactive, and generative learning in the gifted. These are problem-based learning, bibliotherapy, pacing, problem solving, questioning techniques, inquiry and content-based strategies. With the technological developments, it also becomes necessary to use digital tools within the differentiated instructional designs in order to enhance the differentiation process. Digital differentiation is a strategy for designing flexible learning paths and aiming at facilitating student learning process by asking essential questions and using digital tools (Kaplan Sayı & Soysal, 2022). In this strategy, teachers and instructional designers can use digital materials and tools for facilitating the instruction based on students' needs (Kaplan Sayı, 2022). Digital

differentiation can be used as a strategy in differentiated values education instructional designs for gifted. In digital differentiation for values education, tools and techniques in the literature can be used together with digital tools.

Kurnaz (2012) lists various tools and techniques that can be used in values education. These can be proverbs, social activities, learning by service, historical events and our cultural heritage, Nasreddin Hodja anecdotes and Qur'an anecdotes. In addition to these, the lives of important personalities in culture, children's literature, creative drama, mentoring, movies, documentaries, cartoons, games, Mevlâna and Mesnevi, tales, and Turkish Mythology can be used in values education. Moral discussions with gifted students, projects focusing on social justice, reading and writing activities on moral issues, participating in intercultural projects can contribute to values education (Orman, 2020). Roeper and Annemarie (2009) describe the activities that can be done in the values education of gifted students as follows (As cited by Gündüz, 2010, p. 172):

- The biographies of great personalities who devoted their lives to the service of society and humanity can enable them to discover human values. Visual and audio materials can be given to students to get to know the great personalities who are in the position of moral leaders and to meet with role models.
- Students can critically examine the development of value-thought systems in history and their effects on the evolution of society.
- Students can be informed about figures who lived in history and spent their lives devoted to the well-being, existence, health and salvation of others.
- Activities that allow students to develop their perspectives can be carried out through role playing and simulations. It can be ensured that students discuss daily issues and events, develop perspectives, express their feelings and thoughts, and make comments and evaluations.
- By allowing them to work in mutual interaction and cooperation, activities can be organized to respect each other's rights, develop empathy and gain social responsibility.
- Working with non-governmental organizations such as an activist to identify, analyze and solve real-life problems.
- Gifted students can be prompted to think about what kind of contributions they can make to society and the effects of the environment on them.
- Adults should be models for gifted students.

In the literature, there are studies investigating the effect of values education applied to gifted students. Dilmaç, Kulaksızoğlu and Ekşi (2007) concluded that the human values education program of high school students is effective in the development of students' value acquisition levels. In another study, it was found that the education given to gifted students at the secondary school level helps to increase their awareness of tolerance, love and democracy is effective (Çetinkaya & Kincal, 2014). Ateş (2014) determined that the values education given to gifted 6th grade students resulted in a difference in favor of the posttest in the scores of the target behavior development scale. Tortop (2018) suggested a differentiated program called Moral and Character Education Program for Gifted (MCEPG). Çoban (2019) investigated teacher opinions about MCEPG. All the teachers stated that they found it effective, appropriate, and correct to use texts consisting of the lives of scientists in MCEPG.

There are few values education studies applied to gifted students in the literature. Unfortunately, there are not many studies to support this field (Tortop, 2018). In addition, the knowledge level of gifted students in the 7-12 age group about values is not sufficient. Values education should be given to gifted students in this age group, starting from the receiving step in the teaching of affective acquisitions. In values education, activities that will make the meanings related to values clear should be used (Kurnaz, Çiftci & Karapazar, 2013).

The Jodie Mahony Center for Gifted Education, affiliated with the University of Arkansas, has published a book called "Blueprints for Biography" for STEM (science, technology, mathematics, engineering) and character education (Jodie Mahony Center for Gifted Education, 2009). This book includes biographies of famous scientists, book recommendations and quality teaching activities. In a sense, science and character education are supported. In Türkiye, the book called "We are Valuable with Our Values, Values Education Activity Book with Biographies" under the editorship of Çalışkan and Öntaş (2020) was published. In this book, personality-values were matched, and values were tried to be gained through reading-writing activities.

In the current study, the differentiated instructional design for the value education of gifted was created and examined its efficiency. In the instructional design, biographies of talented Turkish people were included and digital differentiation tools were used.

Main Problem Statement

The problem of the current research is defined as "What is the efficiency of the differentiated instructional design for value education of gifted?" For this purpose, answers to the following questions were sought during the research process.

- Does the differentiated instructional design for value education affect the values development of gifted students?
- What are the views of gifted students about the differentiated instructional design?
- How do the cartoon scripts, cartoons, and cartoon presentations developed by students reflect the implementation process of the differentiated instructional design?
- What are the observations of researchers about the implementation process of the differentiated instructional design?

Method

Research Pattern

In this study, the mixed method, in which quantitative and qualitative methods are used together, was used. Mixed methods research can be expressed as a research approach in which both quantitative and qualitative data are used by researchers to understand the research problem. The collected data are combined and the results are drawn by using this combination (Mertkan, 2015). This research was modeled according to the embedded experimental design. Embedded experimental design or intervention design is a mixed research design in which one of the qualitative or quantitative approaches is dominant and the secondary approach is embedded in the dominant approach or hidden in the dominant approach (Creswell & Plano Clark, 2014). Embedded experimental design emerges when the researcher embeds qualitative data into experimental designs. Qualitative data are included in the application before, during or after an experiment. The research process is given in Figure 1.

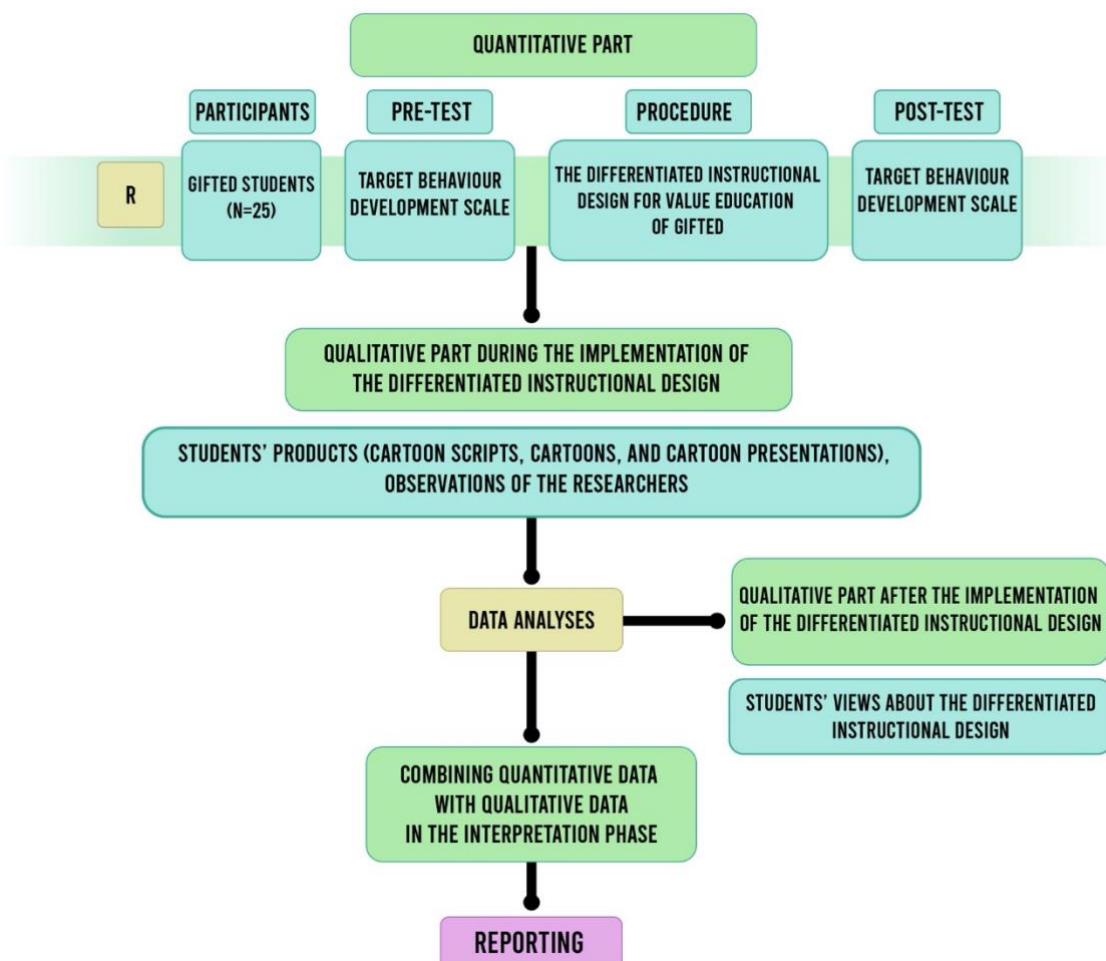


Figure 1.

Research Process

R: Subjects are assigned to groups randomly

The quantitative part of the study was carried out using a single-group pre-test-post-test experimental design. The single-group pretest-posttest experimental design is one of the weakest among the experimental designs. However, as Creswell (2012) stated, it is the nature of the research to prefer the single-group experimental design in studies where a new educational module is developed and applied. The effect of the experimental procedure was tried to be tested by the operation performed on a single group of gifted students. The measurements of the subjects regarding the dependent variable were obtained with the same measurement tool on the same subjects as the pre-test before the experimental procedure and the post-test afterwards (Büyüköztürk et al. 2014).

The qualitative part of the study consists of the products developed by the students during the implementation of the values education activities with biographies (cartoon scripts, cartoons and cartoon presentations), the observations of the researchers and the students' views on education after the experiment. Cartoon scripts are the stories of the cartoons. Cartoons are digital products created in Animaker animation program. Students presented their cartoons to their families and friends. Their presentation in this process is also a product.

Participants

The participants are 25 gifted students who continue their education in a Science and Art Center (SAC) located in Balıkesir Province. In Turkey, gifted students continue their education in Science and Art Centers in addition to their formal education processes. SAC work like an out-of-school program and the students are active in weekend or after school hours (Kanlı & Özyaprak, 2016). In SAC, the activities designed for the students are carried out in a way to ensure development by using the existing potentials of the students at the highest level. Gifted students have education in general mental ability, visual arts talent, and musical talent in SAC (MNET, 2016). Thirteen of the students are girls, 12 of them are boys and all of them are 6th grade students. Typical case sampling, one of the purposive sampling methods, was used to determine the study group. Purposive sampling methods allow for in-depth examination of situations that are thought to have rich information (Büyüköztürk et al. 2014; Yıldırım & Şimşek, 2013). In typical case sampling, an average, that is, a typical example, is determined among many cases in the universe and information is collected from this sample (Büyüköztürk et al. 2014). The study group in current research is a typical example among 182 SAC located in 81 provinces of Turkey. The current research was carried out in the fall semester of the 2021-2022 academic year and lasted for 8 weeks.

Data Collection Tools and Data Collecting Process

Target Behaviour Development Scale

Target Behaviour Development Scale; it was developed by Kanger (2007) and its validity and reliability study was carried out by Ateş (2014). The scale is a 112-item, one-dimensional, four-point Likert-type scale developed for students studying in 4th, 5th, 6th, 7th and 8th grades. The scale was developed to measure the extent to which the students acquired the target behaviors related to the 14 values selected after the educational applications. The fourteen values are as follows; cleanliness, honesty and reliability, fairness, responsibility, benevolence, compassion, respect, patience, optimism, frugality, valuing neighborly-relative relations, humility, toleration, bravery. The Cronbach's alpha reliability coefficient of the scale was 0.93, and the test-retest reliability coefficient was found to be 64. High scores that can be obtained from the scale indicate that students' target behavior development is high. The lowest score that can be obtained from the scale is 112 and the highest score is 448. In the analysis of the data set obtained in a study conducted by Akan and Tatik (2020) with 262 secondary school students, the KMO value was found to be 902 and the Cronbach Alpha value to be .921. In the same study, a single factor structure that met 48.68% of the total variance was obtained in the exploratory factor analysis, and the values of the fit index were found to be at acceptable levels in the confirmatory factor analysis.

Mentimeter web 2.0

Mentimeter web 2.0 tool was used to measure the views of gifted students on the differentiated instructional design for value education. Mentimeter is a cloud-based web 2.0 tool used to add interactivity to presentations using live questions, quizzes and polls to improve student engagement. After the implementation, the students were asked to describe their views on education in three words in Mentimeter.

Checklist for Students' Products

During the implementation of the differentiated instructional design for value education of gifted, students' products (cartoon scripts, cartoons and cartoon presentations) were collected as documents and evaluated using a checklist. Information on the criteria in the checklist is included in the findings section of the current study.

Observations

While trying to understand the observations of researchers about the teaching process, the video recordings taken while the activities were carried out over the Zoom program were watched. The researchers noted down their observations using the videos, the notes they took together and the points of hesitation were discussed with the three researchers, and the observations were reflected in the project report in line with the joint decisions.

Data Analysis

The data obtained in the quantitative part of the study were analyzed using SPSS 22 software. When analyzing the data on the target behavior levels regarding the values, first of all, the mean, standard deviation, mode, median, skewness and kurtosis values of the data set were calculated and then the distribution of the data was examined. The kurtosis and skewness coefficients of the pre-test and post-test scores obtained from the target behavior scale for values were calculated. The kurtosis coefficient for the pre-test scores is -.594, and the skewness coefficient is -.238. The kurtosis coefficient of the posttest scores is -.907 and the coefficient of skewness is -.533. Skewness and kurtosis values being within the limits of -1 and +1 are an indicator of normality (Garson, 2012; George & Mallory, 2010; Tabachnick & Fidell, 2001). After examining the distribution, it was decided to apply parametric tests.

In order to understand whether the difference between the pre-test and post-test scores of the gifted students regarding the target behavior levels regarding values is significant, the dependent samples t-test was performed. In addition, the effect size (Cohen d) was calculated in order to understand how effective the experimental procedure was.

Using the Mentimeter web 2.0 tool, the students explained their thoughts about education in three words. Mentimeter creates a word cloud with the words entered by the students, and the sizes of the words with high frequency are also large in the word cloud. In addition, the frequencies of the words can be seen by clicking on them. Frequencies are noted. Student products were analyzed with a descriptive approach. On the checklist consisting of ten criteria, markings were made as "yes" or "no". In the checklist, it was determined how many criteria were stated as "yes" or "no". The researchers' observations were analyzed descriptively.

Procedure

Turkish talented people and the values we can see in their lives have been determined as follows (Çalışkan & Öntaş, 2020).

Table 1.

Turkish Talented People and the Values

| Turkish Talented People | Talent Field | Value/Values |
|---|--|----------------------|
|  | He has important works on literature, morality and ethics. For detailed information: https://en.wikipedia.org/wiki/Ahmad_Yasawi | Unity and Solidarity |
|  | He has important works on the field of literature and music. For detailed information: https://en.wikipedia.org/wiki/Asik_Veysel | Patience |

Aşık Veysel Şatiroğlu
Born:1894, Died:1973



He is a Turkish doctor, academician, biochemist, molecular biologist and a scientist who won the 2015 Nobel Prize in Chemistry.

For detailed information:

https://en.wikipedia.org/wiki/Aziz_Sancar

Diligence

Aziz Sancar

Born:1946, Died:-



He is a Muslim mystic, saint, Sayyid and philosopher from Khorasan who lived and taught in Anatolia. He is revered among Alevis for an Islamic understanding that is esoteric (spiritual), rational, progressive, and humanistic.

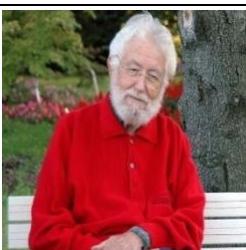
Peace

For detailed information:

https://en.wikipedia.org/wiki/Haji_Bektash_Veli

Haji Bektash Veli

Born:1209 CE, Died:1271
CE



He is a Turkish industrialist and environmental activist. In his fifties, he established Turkey's first private arboretum. He is also one of the founders of Turkish Foundation for Combating Soil Erosion (TEMA).

Environmental Awareness

For detailed information:

https://tr.wikipedia.org/wiki/Hayrettin_Karaca

Hayrettin Karaca

Born:1922, Died:2020



He is often known in the West as Avicenna, was a Persian polymath who is regarded as one of the most significant physicians, astronomers, thinkers and writers of the Islamic Golden Age, and the father of early modern medicine. He was a Muslim Peripatetic philosopher influenced by Greek Aristotelian philosophy.

Diligence

For detailed information:

<https://en.wikipedia.org/wiki/Avicenna>

Ibn-i Sina
Born:980, Died:1037



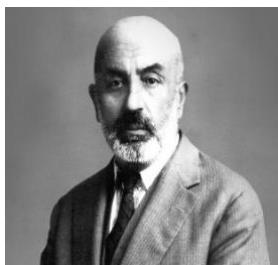
He is an architect and businessman known for his helpfulness.

Helpfulness

For detailed information:

<http://www.ibu.edu.tr/izzet-baysals-life>

Mustafa İzzet Baysal
Born:1907, Died:2000



Mehmet Akif Ersoy
Born:1873, Died:1936

He was a Turkish poet, writer, academic, politician, and the author of the Turkish National Anthem. Widely regarded as one of the premiere literary minds of his time, Ersoy is noted for his command of the Turkish language, as well as his patriotism and role in the Turkish War of Independence.

Patriotism

For detailed information:

https://en.wikipedia.org/wiki/Mehmet_Akif_Ersoy



Mehmet Ali Kağıtçı
Born:1899, Died:1982

Turkish chemist and paper engineer. He assumed the leadership and pioneering role in the establishment of the national pulp and paper industry in Turkey and became the founder of the Turkish paper industry.

Diligence

For detailed information:
https://tr.wikipedia.org/wiki/Mehmed_Ali_Kagitci



Mevlâna Celaleddin Rumi
Born:1207, Died:1273

His poems have been widely translated into many of the world's languages and transposed into various formats. Rumi has been described as the "most popular poet" and the "best selling poet" in the United States.

Tolerance

For detailed information:

<https://en.wikipedia.org/wiki/Rumi>



Muazzez İlmiye Çığ
Born:1914, Died:-

She is a Turkish archaeologist and Assyriologist who specializes in the study of Sumerian civilization.

Sensitivity to Historical and Cultural Heritage

For detailed information:

https://en.wikipedia.org/wiki/Muazzez_Ilmiye_Cig



Mustafa Kemal Atatürk
Born:1881, Died:1938

He is a Turkish field marshal, revolutionary statesman, author, and the founding father of the Republic of Turkey, serving as its first president from 1923 until his death in 1938. He undertook sweeping progressive reforms, which modernized Turkey into a secular, industrializing nation.

Independence and Patriotism

For detailed information:

https://en.wikipedia.org/wiki/Mustafa_Kemal_Ataturk



Osman Hamdi Bey
Born:1842, Died:1910

He is an Ottoman administrator, intellectual, art expert and also a prominent and pioneering painter. He was also an accomplished archaeologist, and is regarded as the pioneer of the museum curator's profession in Turkey. He was the founder of Istanbul Archaeology Museums and of the Istanbul Academy of Fine Arts.

Aesthetic

For detailed information:

https://en.wikipedia.org/wiki/Osman_Hamdi_Bey



Piri Reis
Born:1465 Died:1553

He is an Ottoman admiral, navigator, geographer and cartographer. He is primarily known today for his maps and charts collected in his *Kitab-ı Bahriye* (Book of Navigation), a book that contains detailed information on early navigational techniques as well as relatively accurate charts for their time, describing the important ports and cities of the Mediterranean Sea.

Patience

For detailed information:

https://en.wikipedia.org/wiki/Piri_Reis



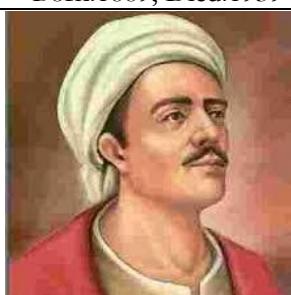
Seyit Onbaşı
Born:1889, Died:1939

He is usually called Corporal Seyit (Turkish: Seyit Onbaşı) was a First World War gunner in the Ottoman Army. He is famous for having carried three shells to an artillery piece during the Allied attempt to force the Dardanelles on 18 March 1915.

Responsibility and Sacrifice

For detailed information:

https://en.wikipedia.org/wiki/Seyit_Cabuk



Yunus Emre
Born:1238, Died:1328

He was a Turkish folk poet and Sufi mystic who greatly influenced Turkish culture. He wrote in Old Anatolian Turkish, an early stage of Turkish. The UNESCO General Conference unanimously passed a resolution declaring 1991, the 750th anniversary of the poet's birth, International Yunus Emre Year.

Love, Belief

For detailed information:

https://en.wikipedia.org/wiki/Yunus_Emre

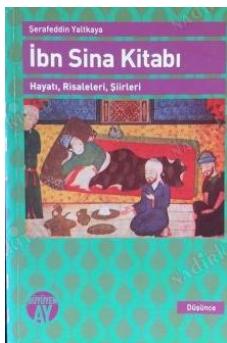
After the pairings in Table 1 were determined, these Turkish talented people were introduced to the students and the implementation process of the activities was explained. The students were reminded that they would research the biographies of the personalities they chose, and that they should pay attention to how we see the values in Table 1 in the lives of the person. It was also reminded that they would make a cartoon about the personalities and values whose biography/biographies were read within the scope of the activities.

Students were shown how to do research on "Google Scholar", "DergiPark" and "YÖK Thesis" databases in order to research the biographies of personalities from the reliable sources. Students were reminded that they could also do research on various websites and video sharing sites, but it was indicated that they should test the accuracy of the information in these environments. In addition, a book recommendation was made for each person to procure their biography. These book recommendations are as follows:

Table 2.
Book Recommendations

| Turkish Talented People | Related Book |
|-------------------------|--|
| Ahmet Yesevi | Gönülleri Fetheden Bilge-Hoca Ahmet Yesевi (Writer: Hakan Keleş) https://www.amazon.com.tr/Hoca-Ahmet-Yesevi-Gonulleri-Fetheden/dp/6054599828 |
| Aşık Veysel Şatiroğlu | Aşık Veysel (Writer: Doğan Kaya) |
| Aziz Sancar | Adam Olmuş Çocuklar/Ben Aziz Sancar (Writer: Suat Turgut) https://www.amazon.com.tr/Ben-Aziz-Sancar-Cocuklar-Serisi/dp/6059470300 |
| Hacı Bektaş-ı Veli | Hacı Bektaşı Veli'den Bilgelik Hikayeleri (Writer: İbrahim Murat) https://www.amazon.com.tr/Haci -Bektsi-Veliden-Bilgelik-Hikayeleri/dp/6055032376 |
| Hayrettin Karaca | "Hayrettin Karaca Kitabı" Erozyon Dede (Writer: Şengün Kılıç Hristidis) https://www.amazon.com.tr/EROZYON-DEDE-HAYRETTIN_KARACA/dp/9944882976 |

İbn-i Sina



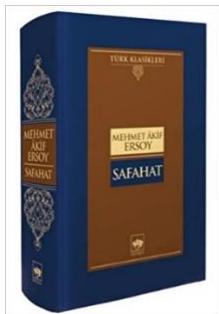
İbn-i Sina Kitabı Hayatı, Risaleleri, Şiirleri (Writer: Serafeddin Yaltkaya)

Mustafa İzzet Baysal



Bir Çocuk, Bir Şehir ve Bolu (Writer: İlhan Akın ve Halit Karatay)

Mehmet Akif Ersoy



Safahat (1911)

<https://www.amazon.com.tr/Safahat-Ciltli-Mehmet-Akif-Ersoy/dp/6254080826>

Mehmet Ali Kağıtçı



Bir Cumhuriyet Aydını M. Ali Kağıtçı (Writer: Mehmet Sarıoğlu)

Mevlâna Celaleddin Rumi



Mevlâna-hayatı, Şahsiyeti, Fikirleri (Writer: Şefik Can)

https://www.amazon.com.tr/MEVLANA-HAYATI_SAHSIYETI_FIKIRLERİ/dp/975437161X

Muazzez İlmiye Çığ

Muazzez İlmiye Çığ'a Armağan Kitap, Cumhuriyete
Adanan Bir Ömür

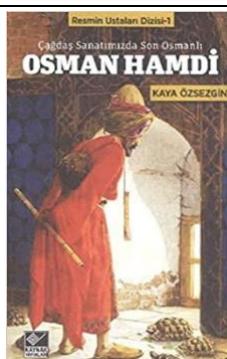
Mustafa Kemal Atatürk



Nutuk

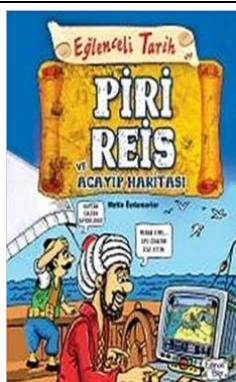
[https://www.amazon.com.tr/Nutuk-Kutulu-Ciltli-Mustafa-Ataturk /dp/9750820037](https://www.amazon.com.tr/Nutuk-Kutulu-Ciltli-Mustafa-Ataturk/dp/9750820037)

Osman Hamdi Bey

Çağdaş Sanatımızda Son Osmanlı, Osman Hamdi (Writer:
Kaya Özsezgin)

<https://www.amazon.com.tr/Cagdas-Sanatimizda-Osmanli-Osman-Hamdi/dp/9753438567>

Piri Reis



Piri Reis ve Açayıp Haritası (Writer: Metin Özdemirler)

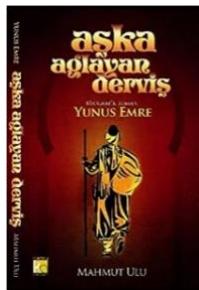
<https://www.amazon.com.tr/Eglenceli-Tarih-Piri-Acayip-Haritasi/dp/6050828709>

Seyit Onbaşı



Seyit Onbaşı (Writer: Haldun Terzioglu ve Suat Yılmazer)

Yunus Emre



Aşka Ağlayan Dervis Yunus Emre (Writer: Mahmut Ulu)

<https://www.amazon.com.tr/ASKAAGLAYAN-DERVIS-YUNUS-EMRE/dp/6051130705>

The differentiated instructional design was carried out on four different student groups at the 6th grade level. The first group consists of 5 students, the second group consists of 8 students, and the third and fourth groups each consist of 6 students. All of the activities were implemented for 8 weeks (October-December 2021), 2 lesson hours per week via the Zoom program with distance education. The application flow of the activities is as follows:

Example Acitivity: Tell as an Expert

After the students researched the biographies of the Turkish talented people and how they saw the related values in their lives, they met on the Zoom program during the distance education process. A discussion was held with small groups over what they read. It was ensured that each student had information about the biographies and values of the personalities that they did not choose. Afterwards, the “Tell as an Expert” activity was held. This activity is designed as a game in which students can talk in detail about personalities and the values. Free sample activities on the website www.twinkl.com.tr were used in the structuring of this activity.

In this activity, the students were asked to talk about Turkish talented people with their friends for two minutes. Students were scored for each word used correctly while speaking. Points are earned once for each word. However, points are deducted if any word from the prohibited column is used. Students were asked to self-assess their expertise with a thermometer. An example activity is presented in Figure 2.

| 1 puan • | 2 puan •• | 3 puan••• | -1 puan |
|--------------|------------------------------------|-------------------------------------|---------------|
| tarih | Hittit tabletleri | Kültürel mirasa duyarlılık | sevmek |
| müze | Zaman Tuneliyle Sümerlere Yolculuk | Tarih bilinci | İmmm/Hmm |
| bilim | Asuroloji | Geçmişini bilmenin geleceğin yoktur | bence |
| muallime | İstanbul Arkeoloji Müzesi | Genlerimizde aydınlanık vardı | güzel |
| lahit-tablet | Muazzam Muazzez | Sumerolog | biliyor musun |

Figure 2.
Tell As An Expert Activity

After the students analyzed and discussed the biographies, activities were carried out to develop stories for cartoons and turn them into scripts, to make cartoons in the Animaker program and to bring the films together with the audience at the gala night.

First of all, the Animaker program, which is free and easy to use, was introduced to the students. In this program, students can design their own characters, add voices, actions and facial expressions to their characters, plan the details (backgrounds, music, sound recordings, transitions, etc.) of cartoons, and in short, turn their scenarios into a cartoon.

While the movies are being created, the time arrangements of the sound, actions and various effects of each scene are carried out through the time panel, which is very easy to use. Cartoons are automatically saved in the “my projects” section of the user account, and students can continue their studies whenever they want from where they left off. There are also features to collaborate remotely, share movies in video format or via links in Animaker. Animaker working environment is presented in Figure 3(a-b).

**Figure 3.***Animaker Working Environment*

Students were taught how to use the Animaker program in practice. In this process, subjects such as character design, voice recording, voice-character synchronization, adding facial expressions, adding motion/action, time panel management, scene planning and recording the movie were emphasized.

After the training in Animaker, the students wrote cartoon scripts, made scene plans, and structured the details of their cartoons (character design, background selection, sound recording, timing, etc.) using the knowledge they gained from their biography studies and their creative thinking skills. After the cartoons were completed, films were watched at a summative gala night attended by students and parents, and a short discussion was held on the films. Figure 4 contains some screenshots from cartoons.

**Figure 4.***Screenshots from Cartoons*

In Figure 4-a, by two secondary school students are observing Aziz Sancar and Muazzez İlmiye Çığ. In the cartoon, their experiences, industriousness, sensitivity to historical and cultural heritage are emphasized. In Figure 4-b, there is a cartoon about why patience is important in Aşık Veysel's life on a long, narrow road. In Figure 4-c, there is a cartoon about Yunus Emre's life and his understanding of love with himself and the times in which he lived. In Figure 4-d, there are images from a cartoon about the value of peace between Hacı Bektaş-ı Veli and children. In Figure 4-e, there is a cartoon about how the conflict between Hayrettin Karaca, who wants to develop a forest region, and Muazzez İlmiye Çığ, who wants to excavate in that region, was resolved. Finally, in Figure 4-f, there is a cartoon that starts with the disappearance of a valuable oil painting and the cartoon emphasizes its aesthetic value.

Findings

Within the framework of the main problem of the study and the sub-problems emerging from this problem, the findings obtained from the data tool determined for the research are shared in detail below.

The Effect of the Differentiated Instructional Design on the Values Development of Gifted

The first sub-problem of the research was to determine whether the differentiated instructional design for value education affects the values development of gifted students. In this context, the findings of the dependent samples t-test was presented in Table 4.

Table 4.

The Findings of the Dependent Samples t-Test

| Scores | N | \bar{X} | t | p |
|-----------|----|-----------|-------|------|
| Pre test | 25 | 347.72 | -3.78 | .001 |
| Post test | 25 | 395.20 | | |

According to the dependent sample t-test results given in Table 4, the difference between the pre-test and post-test scores of gifted students' target behavior development levels regarding values is significant ($p < .05$). Post-test mean score ($\bar{X} = 395.20$) is higher than pre-test mean score ($\bar{X} = 347.72$).

The effect size (Cohen d) of the difference between the pretest and posttest scores of the study group was calculated as 1.047 (high effect size). $d=0.2$ indicates small effect, $d=0.50$ medium effect, and $d=0.80$ large effect. It may be said that the study has a high effect size in terms of target behavior development levels related to values (Lenhard & Lenhard, 2016).

Gifted Students' Views about the Differentiated Instructional Design

The views of gifted students about the differentiated instructional design was analyzed after the implemenation. The findings regarding this are shown below. The words and frequencies of the students' opinions about the experimental process are given in Table 5.

Table 5.

Words Used by Students and Their Frequencies After Experimental Process

| Words | Frequencies (f) | Words | Frequencies (f) |
|-------------------|-----------------|--------------------|-----------------|
| Funny | 18 | Seyit Ali Çabuk | 1 |
| Instructive | 14 | Empathy | 1 |
| Our Values | 14 | Applied | 1 |
| Cartoon | 4 | Love | 1 |
| Animation | 3 | Friendship | 1 |
| Technology | 2 | Mehmet Ali Kâğıtçı | 1 |
| Beneficial | 2 | Book | 1 |
| Different/Unusual | 2 | Patience | 1 |
| Friendship | 1 | Directing | 1 |
| Premiere night | 1 | Interaction | 1 |
| Sumerology | 1 | Character Design | 1 |
| Biography | 1 | | |
| | | Total | 75 |

In order to better understand the words given in Table 5 and their frequencies, the word cloud given in Figure 5 was created.

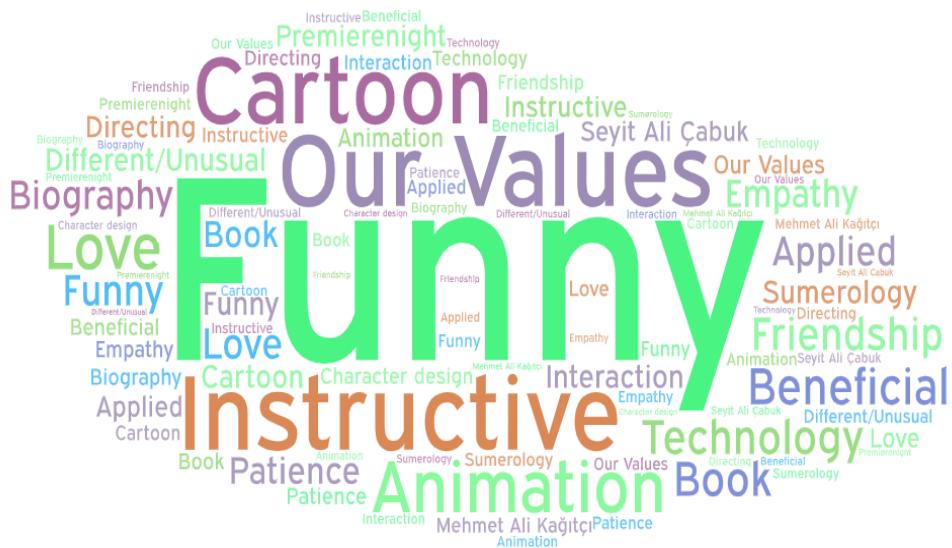


Figure 5.
Word Cloud

When Table 5 and Figure 5 are examined together, it is seen that students mostly use the words fun ($f=18$), instructive ($f=14$) and our values ($f=14$), respectively, for technology enriched values education activities with biographies. In addition, the students also emphasized that the cartoons they created during the application process, the personalities, the values that attracted their attention, the use of applied technology and the activities were different.

Reflections of the Implementation Process of the Instructional Design on Gifted Students' Products

The cartoon scripts, cartoons and cartoon presentations of the students were evaluated with a checklist. Table 6 presents the analysis performed using the checklist criteria. When Table 6 is examined, it is seen that the students are successful in writing scenarios and transforming the scenario into a cartoon. Students especially had problems with sound synchronization. In addition, it was observed that some students did not comply with the planning (character, background, location, etc.) they had made before while creating the cartoon.

Table 6.

Analysis Results Regarding the Evaluation of Cartoon Scenarios and Cartoons according to the Criterias in the Checklist

| No | Criterias | Yes (f) | No (f) |
|----|--|------------|-----------|
| 1 | The plot in the story has been converted into a script to be used in the cartoon. | 25 | 0 |
| 2 | The design of the characters is compatible with the characters told in the story. | 22 | 3 |
| 3 | The location in the story and the shooting plan in the cartoon are in harmony with each other (<i>The shooting plan is the edited version of a film on paper</i>). | 21 | 4 |
| 4 | The time in the story is reflected in the cartoon with visual and auditory elements. | 25 | 0 |
| 5 | At least one character has been originally designed in Animaker. | 25 | 0 |
| 6 | The voice of the characters in the cartoon has been recorded or the text has been converted into voice. | 24 | 1 |
| 7 | Emotional expression and movement have been added to the characters in the cartoon. | 25 | 0 |
| 8 | Selected personalities and values are reflected in the cartoon. | 25 | 0 |
| 9 | Since the duration of the elements in the cartoon was successfully arranged on the timeline, there was no synchronization problem. | 20 | 5 |
| 10 | The cartoon was successfully presented to other students and audiences. | 25 | 0 |

The Observations of the Researchers about the Implementation Process of the Differentiated Instructional Design

The researchers analyzed the implementation process of the differentiated instructional design by watching the videos recorded through the Zoom program and reached the following results:

The students learned the Animaker program very easily, and the character design, sound recording and animation features attracted their attention the most. It has been observed that the students are quite happy and satisfied with the process and had fun.

All of the students participated in the readings (at home) and the discussions in the classroom. It has been noticed that outside of class hours, students work individually or by using the "work together feature" of Animaker to better understand the technical features. In the design of the cartoons, the students worked individually.

Students included family members in the cartoons they created. In most of the cartoons, the adult characters were voiced by the students' parents, while the children's characters were voiced by themselves, their friends and sisters or brothers.

It was observed that students chose mostly Aziz Sancar, Muaazzez İlmiye Çığ, Mustafa Kemal Atatürk Hayrettin Karaca, Mehmet Akif Ersoy and Yunus Emre among other famous Turkish adult personalities. It has also been observed that the students who also receive education in the fields of visual arts and music at SAC chose Osman Hamdi Bey and Aşık Veysel Şatiroğlu.

The students wanted to do the "Tell as an expert" activity for a long time. It was observed that they were highly motivated for this activity. The students wanted to determine the words in the activity content and play the game repeatedly.

In the process of creating cartoons, the students addressed themselves with features such as director, cartoon animation specialist, voiceover specialist, character designer. They stated these in the last scene of their cartoons and added the names of the people they received help from their films.

It was understood that the students had the most problems in the management of the panel during the cartoon process. Here, sound, animation and camera settings for characters and objects are configured simultaneously. Students who had problems received help from their friends.

Conclusion and Discussion

In the current study, the differentiated instructional design for value education was applied to gifted students in an online environment and the efficiency of the differentiated instructional design was investigated. It was observed that the difference between the pre-test and post-test scores of the target behavior development levels of the gifted students regarding the values was significant. This difference is in favor of the post-test and the effect size is high ($d=1.047$, $p<.05$). In other words, the differentiated instructional design for value education increased the values development of gifted students and it was effective in this context. Similarly, Dilmaç, Kulaksızoglu and Ekşi (2007) concluded that the values education program is effective in the development of the value development levels of gifted high school students. The values education carried out on the awareness of gifted secondary school students about tolerance, love and democracy has also been effective (Çetinkaya & Kincal, 2014). The values education activities carried out with gifted 6th grade students created a significant difference in the students' target behavior development scale scores in favor of the posttest (Ateş, 2014).

The conclusions of Dilmaç, Kulaksızoglu and Ekşi (2007), Çetinkaya and Kincal (2014) and Ateş (2014) in their researches coincide with the conclusion of the current research. It is clear that gifted students' values development was increased. However, what is important here is how values education is carried out with gifted students. If the techniques and skills that can activate more than one high-level thinking skill are adapted to the subject covered, great-effective increases occur in the learning of gifted students (VanTassel-Baska & Brown, 2007, cited in Türkman, 2007). Strategies such as inquiry based teaching, adjusting teaching according to students' pace, creative problem solving, bibliotherapy, problem-based and project-based learning provide open-ended, interactive and productive learning opportunities for gifted students (Şahin, 2018; Tortop, 2015).

Within the scope of the current study, gifted students researched the biographies of Turkish talented people mostly from scientific sources and they deepened their reading in the context. They were also busy with enriched content thanks to the tell as an expert activity, they had the chance to choose the content they wanted, and they had deep discussions about the content they read in the classroom. They interacted with each other and the course content, and reflected their learning by transforming them a cartoon using technology. In a sense, differentiated teaching and learning activities made positive contributions to students' learning. It is important to develop the activities for gifted students by taking into account the readiness, interests and needs of the students (Sak, 2014, Şahin, 2018). Content (subject), process (thinking skills, research skills, basic disciplinary skills) and product (communication styles to express learning) should be differentiated according to the aforementioned characteristics of gifted students (Avci & Bal-Sezerel, 2018). For these reasons, the differentiated instructional design in the current study is considered to be effective.

Gifted students expressed their views on the differentiated instructional design the most with the words "fun, instructive and the values". Along with these, they also mentioned the Turkish talented people whose biographies were examined during the education, along with words such as cartoon, animation, technology, useful, different. As a result of the evaluation of the scripts and cartoons produced by the students, it was seen that the students were successful in writing scripts and developing their cartoons. It was observed that they had some technical difficulties in the cartoon development process and that some students did not fully comply with the plans they made in the cartoon development process.

Gifted students find technology-integrated activities enjoyable and enjoy participating in these activities. While they develop their skills in using technology productively and doing research using technology, they also get the opportunity to learn the course content (Avçu, 2019; Ayverdi, 2018). In the current study, they used technology both to do research and to produce cartoons in the Animaker program in values education activities with biographies. All of the activities were held online via the Zoom program.

During the Covid 19 pandemic, they had the chance to come together online, meet their learning needs, express themselves, interact and produce products. This can be explained by the fact that gifted students find values education with biographies entertaining and instructive and that they are successful in producing cartoons using technology. In addition, gifted students love to produce new products with information technologies and expect to have training on animation, cartoon making, game development and using new technologies (Öngöz & Aksoy, 2015). At the same time, they use technology as a means of learning from others and sharing what they produce with others. Internet is the technology they find most meaningful for them (Siegle, 2005, p. 30). Digital gifted natives, who can use the Internet and mobile technologies as a language, and who participate in the production and sharing of content on the Internet, see virtual environments as a primary source for socializing, having fun and gaining information (Köroğlu, 2015). In this case, it can be said that values education activities with biographies enriched with technology have significant effects on students despite some difficulties and frustrations.

The results of the analysis of the videos and the observations during the implementation of the differentiated instructional design also show that the gifted students successfully use the cartoon making program (Animaker) and are satisfied with the process of producing and sharing their products. Giving them input in the implementation of the activities, choosing the personality and value matching they wanted, enabled them to participate in the process of research and making cartoons, and to work to produce outside of the classroom. The fact that the students include their family members and friends in the cartoons, especially in the voiceovers, can also be considered as a separate achievement of the process. Such that, the adoption of the values of the society by gifted students and the formation of their value judgments depend primarily on the content and quality of the education they will receive in the family and then in the educational institutions. Values brought to students by families and educational institutions can be different from each other with the effect of mass media and social environment (Sezer, 2016). The participation of parents in values education activities with biographies applied within the scope of this study may contribute to their children's awareness of the content and implementation of values education and to reinforce values outside the teaching process.

At the same time, parents can take the values in the lives of famous Turkish personalities as an example and reflect what they have gained in the process of being a model. It was also understood that gifted students chose Aziz Sancar, Muaazzez İlmiye Cig, Mustafa Kemal Atatürk, Hayrettin Karaca, Mehmet Akif Ersoy, Yunus Emre, Osman Hamdi Bey and Asik Veysel to study more than other Turkish personalities. It is thought that students' interests (science, art, etc.) are effective on this situation.

Recommendations

Based on the conclusions of the current research, the following recommendations were developed.

Recommendations for Further Research

- The effect of values education activities on certain values can be examined in detail with biographies. Comparative studies can be done by establishing experimental and control groups. The other scales developed in the literature can be used to measure achievements related to values.
- It can be recommended that future researchers ensure the participation of families in values education activities if at all possible.

Recommendations for Applicants

- The links of the the cartoons can be converted into QR code form and shared on digital media or school boards, so that the study can be disseminated. It is possible for different people to benefit from these studies and to raise awareness about the values.
- Activities carried out within the scope of values education with biographies (researching biographies, discussing, speaking like an expert, making cartoons, sharing, etc.) can be applied with different gifted students and the students with normal abilities.
- In the current study, students worked individually. In different studies, group work can be done by taking into account the leadership characteristics of gifted students.
- This study was implemented in the online environment. The effects of the flipped, blending or face-to-face learning options can be compared.

Limitations of Study

It is a limitation that the research was conducted with gifted students in Balıkesir city center. The use of single-group experimental design in the quantitative part of the study is another limitation of the study. In the study, the instructional design was shaped according to the general instructional design model, but one of the instructional design models recommended for gifted students was not used. This situation can be considered as a limitation of the research.

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References

- Akan, Y., & Tatik, R. S. (2020). Relationship between students' moral maturity, democratic attitude and target behaviour development levels: A correlational study. *International Online Journal of Educational Sciences*, 12(4), 1-20.
- Akbaş, O. (2004). *Türk Milli Eğitim Sisteminin Duyusal Amaçlarının İlköğretim İkinci Kademede Gerçekleşme Derecesinin Belirlenmesi* (*Evaluation of the Degree of Reaching of Affective Goals at The Elementery Level in Turkish National Education System*). Doktora Tezi, Gazi Üniversitesi, Ankara.
- Ateş, E. (2014). *Üstün Yetenekli 6. sınıf Öğrencilerine Uygulanan Değerler Eğitimi Programının Etkiliği* (*The Effectiveness of The Applied Values Education to the 6 Year Highly Gifted Students*). Yüksek Lisans Tezi, Yeditepe Üniversitesi, İstanbul.
- Avcı, G., & Bal-Sezerel, B. (2018). Özel yeteneklilerin eğitiminde öğretim programı farklılaştırılması (Differentiation of the curriculum in the education of the gifted students). M.A. Melekoğlu ve U. Sak (Ed.), *Öğrenme güçlüğü ve özel yetenek içinde* (s. 194-214). Ankara: Pegem Akademi.

- Avçu, Y. E. (2019). *Özel Yetenekli Öğrenciler İçin Bilişim Teknolojileri ve Yazılım Alanına Yönelik Bir Öğretim Tasarımının Geliştirilmesi (Developing an Instructional Design for Gifted and Talented Students Towards the Field of ICT And Software)*. Doktora Tezi, Balıkesir Üniversitesi, Balıkesir.
- Ayverdi, L. (2018). *Özel Yetenekli Öğrencilerin Fen Eğitiminde Teknoloji, Mühendislik ve Matematiğin Kullanımı: FeTeMM Yaklaşımı (Usage of Technology, Engineering and Mathematics in Science Education for Gifted Students: STEM Approach)*. Doktora Tezi, Balıkesir Üniversitesi, Balıkesir.
- Bakan, M., & Onat, R. (2020). Özel yeteneklilerin özellikleri ve gelişimleri (Characteristics and development of gifted students). Kılıç ve M. Çitil (Ed.), *Özel yetenekli öğrencim var* içinde (ss.46-72). Ankara: Gökçe Ofset.
- Berkowitz, M. W., & Hoppe, M. A. (2009). Character education and gifted children. *High Ability Studies*, 20(2), 131-142.
- Büyüköztürk, Ş., Kılıç Çakmak, E., Akgün, Ö. E., Karadeniz, Ş., & Demirel, F. (2014). *Bilimsel araştırma yöntemleri (Scientific research methods)*. (18. Basım). Ankara: Pegem Akademi.
- Cash, T. N., & Lin, T. J. (2021). Psychological Well-Being of Intellectually and Academically Gifted Students in Self-Contained and Pull-Out Gifted Programs. *Gifted Child Quarterly*, 00(0), 1-20.
- Cavilla, D. (2019). Maximizing the potential of gifted learners through a developmental framework of affective curriculum. *Gifted Education International*, 35(2), 136-151.
- Chowkase, A. A. (2022). Three C's conception of giftedness: A call for paradigm shift. *Gifted Education International*, 0(0), 1-8.
- Chowkase A. A., & Watve, S. (2021). From I to we: The three C's conception of gifted education. In R. J. Sternberg, D. Ambrose & S. Karami (Eds.), *Transformational giftedness*. Palgrave-Macmillan.
- Clark, B. (2015). Üstün zekâlı öğrencileri anlamak (Understanding gifted students). F. Kaya ve Ü. Ogurlu (Ed.). *Üstün zekâlı olarak büyümek* içinde (ss.1-34). Ankara: Nobel Akademik Yayıncılık.
- Creswell, J. W. (2012). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (4th ed.). Boston: Pearson.
- Creswell, J. W., & Plano Clark, V. L. (2014). *Karma yöntem araştırmaları tasarımı ve yürütülmlesi (Designing and conducting mixed methods research)* (Çev. Yüksel Dede, Selçuk Beşir Demir ve diğerleri). Ankara: Anı Yayıncılık.
- Cross, T. L. (2021). *On the social and emotional lives of gifted children*. Routledge.
- Çalışkan, H., & Öntaş, T. (Ed.). (2020). *Değerlerimizle değerliyiz: biyografilerle değerler eğitimi el kitabı (We are valuable with our values values education handbook with biographies)*. (2. Baskı). Ankara: Pegem Akademi.
- Çetinkaya, Ç., & Kınçal, R. Y. (2015). Üstün zekâlı ve yetenekli çocukların demokrasi eğitimi (Democracy education of gifted and talented children). *Journal of Gifted Education Research*, 3(1), 1-22.
- Çoban, Ö. (2019). Üstün yeteneklilere yönelik geliştirilen karakter eğitimi programına ilişkin öğretmen görüşlerinin incelenmesi (*Investigation of teachers views on character education program for gifted*). Yüksek Lisans Tezi, Bahçeşehir Üniversitesi, İstanbul.
- Dilmaç, B., Kulaksızoğlu, A., & Ekşi, H. (2007). An examination of the humane values education program on a group of science high school students. *Educational Sciences: Theory & Practice*, 7(3).
- Emir, S., & Yaman, Y. (2017). Giriş: özel yetenekli öğrenciler için eğitim programı nasıl olmalı? (Introduction: What should be the education program for gifted students?). S. Emir (Ed.), *Özel yeteneklilerin eğitiminde program tasarımı* içinde (s.1-21). Ankara: Pegem Akademi.
- Garson, G.D. (2012). *Testing statistical assumptions*. Statistical Associates Publishing.
- George, D., & Mallory, P. (2010). *SPSS for Windows step by step: A simple guide and reference 17.0 update*. (10th Edition.). Pearson.
- Gündüz, T. (2010). Üstün zekâlı çocuklarda ahlâk gelişimi ve eğitimi (Moral development and education in gifted children). *İ.Ü. İlahiyat Fakültesi Dergisi*, 1(1), 157-177.
- Gür, Ç. (2018). Eğitsel ve sosyal-duygusal bakış açıyla üstün yetenekli çocuklar Gifted children with educational and social-emotional perspectives). Ankara: Anı yayıncılık.
- Hébert, T. P. (2021). *Understanding the social and emotional lives of gifted students*. Routledge.
- Hébert, T. P., & Smith, K. J. (2018). Social and emotional development of gifted students. *Gifted Child Today*, 41(4), 176-176.
- Heacox, D., & Cash, R. M. (2020). *Differentiation for gifted learners: Going beyond the basics*. Free Spirit Publishing.
- Hökelekli, H., & Gündüz, T. (2004). Üstün yetenekli çocukların karakter özellikleri ve değerler eğitimi (Character traits and values education of gifted children), *Üstün yetenekli çocuklar bildiriler kitabı*. İstanbul: Çocuk Vakfı Yayıncılık.
- Hökelekli, H., & Gündüz, T. (2013). Üstün Yetenekli Çocukların Değer Yöneleri ve Eğitimleri (Value Orientations and Education of Gifted Children). Kaymakcan, R., Kenan, S., Hökelekli, H., Arslan, S., Zengin, M. (Ed.). *Değerler ve eğitimi*. İstanbul: Değerler Eğitimi Merkezi Yayıncılıarı.
- Jodie Mahony Özel Yetenekliler Eğitim Merkezi (Jodie Mahony Center for Gifted Education). (2009). Blueprints for biography. Erişim adresi <https://ualr.edu/gifted/curriculum/blueprints/>
- Kaplan, S. N. (2021). Differentiation: A Study of its Meaning and Implementation for Gifted Students. *Gifted Child Today*, 44(4), 236-237.
- Kaplan Sayı, A. (2022). Digital Differentiation as a Form of Pedagogical Creativity. In A. Raj (Eds.), *Creativity as Progressive Pedagogy: Examinations Into Culture, Performance, and Challenges* (pp. 126-154). IGI Global.
- Kaplan Sayı, A., & Soysal, Ö. M. (2022). Digital differentiation in gifted Education. In J. L. Nyberg & J. A. Manzone (Eds.), *Creating equitable services for the gifted: protocols for identification, implementation, and evaluation* (pp. 205-225). IGI Global.
- Kanger, F. (2007). Hz. Muhammed ahlakını referans alan bir karakter eğitimi modeli (A Model of Character Education based on the Ethics of Muhammad). Doktora Tezi, Marmara Üniversitesi, İstanbul.
- Kanlı, E., & Özayaprak, M. (2016). STEM education for gifted and talented students in Turkey. *Üstün Yetenekliler Eğitimi ve Araştırmaları Dergisi (UYAD)*, 3(2), 1-10.
- Kenan, S. (2007). Modern eğitimin oluşum sürecinde değerler eğitimi nasıl zayıfladı? (How did values education weaken in the formation process of modern education?) R. Kaymakcan, H. Hökelekli, Ş. Arslan ve M. Zengin (Ed.), *Değerler ve eğitimi*. İstanbul: Değerler Eğitimi Merkezi Yayıncılıarı.

- Kılıç, O. (Ed.). (2020). *Özel yetenekli çocuğum var (I have a gifted child)*. (3. Baskı). Ankara: Millî Eğitim Bakanlığı Destek Hizmetleri Genel Müdürlüğü Ders Aletleri Yayımlama Merkezi.
- Kurnaz, A. (2012). Üstün yetenekli çocuklarda değerler eğitimi (Values education in gifted children). A. Ataman (Ed.). *Geleceğin mimarları üstün yetenekliler sempozyumu kitabı* içinde (ss.49-71). Tekirdağ: Namık Kemal Üniversitesi.
- Kurnaz, A. (2018). Özel yetenekli öğrencilerde değerler eğitimi (Values education in gifted children). F. Şahin (Ed.). *Özel yetenekli öğrenciler ve eğitimcileri içinde* (ss.235-261). Ankara: Anı Yayıncılık.
- Kurnaz, A., Çiftci, Ü., & Karapazar, H. (2013). Üstün zekâlı ve yetenekli öğrencilerin değer algılarının betimsel bir analizi (A descriptive analysis of gifted and talented students' perception of value). *Değerler Eğitimi Dergisi*, 11(26), 185-225.
- Lenhard, W. & Lenhard, A. (2016). *Computation of effect sizes*. Retrieved from: https://www.psychometrica.de/effect_size.html. Psychometrica. DOI: 10.13140/RG.2.2.17823.92329
- Millî Eğitim Bakanlığı (MNET). (2015). *Değerler eğitimi yönergesi (Values education directive)*. Erişim adresi: http://MNETk12.MNET.gov.tr/MNET_iys_dosyalar/34/39/749197/dosyalar/2015_02/09093609_degerleregitimi.pdf
- Millî Eğitim Bakanlığı (MNET). (2016). Bilim ve sanat merkezleri yönergesi (Science and art centers directive). Erişim adresi https://orgm.MNET.gov.tr/MNET_iys_dosyalar/2016_10/07031350_SAC_yonergesi.pdf
- Mertkan, Ş. (2015). *Karma araştırma tasarımları (Mixed research design)*. Ankara: Pegem Akademi.
- Orman, S. (2020). *Değerler eğitimi bağlamında SAC eğitim programlarına ilişkin öğrenci, öğretmen ve yönetici görüşleri (Opinions of students, teachers and administrators regarding SAC education programs in the context of values education)*. Yüksek lisans Tezi. Fırat Üniversitesi, Elâzığ.
- Özbay, Y., & Palancı, M. (2011). Üstün yetenekli çocuk ve ergenlerin psikososyal özellikleri (Psychosocial characteristics of gifted children and adolescents). *Sakarya Üniversitesi Eğitim Fakültesi Dergisi*, 22, 89-108.
- Özkan, M. U. (2013). Üstün zekâlı çocukların özellikleri (Characteristics of gifted children). Erişim adresi <https://tr-static.eodev.com/files/d9c/d8793dba8f44cfbb8c867bf238e8c2e.pdf>
- Renzulli J. S. (2020). Promoting social capital by expanding the conception of giftedness. *Talent*, 10(1), 2–20.
- Renzulli, J. S., & D'Souza, S. (2014). Intelligences outside the normal curve: Co-cognitive factors that contribute to the creation of social capital and leadership skills in young people. In *Critical issues and practices in gifted education: What the research says* (pp.343-362). Taylor & Francis.
- Renzulli, J. S., & Reis, S. M. (2021). The three ring conception of giftedness: A change in direction from being gifted to the development of gifted behaviors. In *Conceptions of giftedness and talent* (pp. 335-355). Palgrave Macmillan, Cham.
- Sak. U. (2014). *Üstün zekâlılar, özellikleri, tanımlamaları, eğitimleri (Gifted children, their characteristics, diagnosis, education)* (4. Baskı). Ankara: Vize Yayıncılık.
- Sezer, Ş. (2016). Velilerin üstün yetenekli öğrencilerin değerler eğitimi üzerine görüşleri (Parents' opinions related to the character education of the gifted students). *Üstün Yetenekliler Eğitimi ve Araştırmaları Dergisi (UYAD)*, 4(2), 29-47.
- Sternberg R. J. (2021) Identification for utilization, not merely possession, of gifts: What matters is not gifts but rather deployment of gifts. *Gifted Education International*, 00(0), 1-8.
- Sternberg R. J., Chowkase A., Desmet O., Karami S., Landy J. and Lu J. (2021). Beyond transformational giftedness. *Education Sciences*, 11(5), 192.
- Sternberg R. J. & Glück J. (2022). *Wisdom: The psychology of wise thoughts, words, and deeds*. Cambridge University Press.
- Şahin, F. (2015). Genel eğitim sınıflarındaki üstün yetenekli öğrencilerin eğitiminde müfredat farklılaştırma (Curriculum differentiation in the education of gifted students in general education classrooms). Üstün zekâlı ve üstün yetenekli öğrencilerin eğitimi içinde (ss.20-38). Ankara: Pegem Akademi.
- Şahin, F. (2018). *Özel yeteneklilerin eğitimi: eğitsel stratejiler ve örnekler zenginleştirilmiş müfredat farklılaştırma modelleri (Education of the gifted: educational strategies and models of curriculum differentiation enriched with examples)*. Ankara: Nobel Yayıncılık.
- Tabachnick, B. G., & Fidell, L. S. (2013). *Using multivariate statistics*. (Six Edition). Pearson Education.
- Tomlinson, C.A. (2015). *Üstün zekâlı ve yetenekli öğrencilerin bulunduğu sınıflarda karma öğretim (The differentiated classroom: Responding to the needs of all learners)*. (S. Emir ve A. Aksu, Çev. Ed.). Ankara: Anı Yayıncılık. (Orijinal çalışma basım tarihi 2001).
- Tucker, B., Hafenstein, N. L., Jones, S., Bernick, R., & Haines, K. (1997). An integrated-thematic curriculum for gifted learners. *Roeper Review*, 19(4), 196-199.
- Turgut Yıldırım, D. (2019). *Üstün Yetenekli Öğrencilerde Değerler Eğitiminin İdareci ve Öğretmen Görüşlerine Göre Değerlendirilmesi (Evaluation of Values Education in the case of Gifted Students According to the Opinions of Teachers and Administrators)*. Yüksek lisans Tezi. İnönü Üniversitesi, Malatya.
- Türkman, B. (2017). Genel Eğitim Programını Özel Yetenekli Öğrencilerin İhtiyaçlarına Göre Farklılaştırma Stratejileri (Strategies for Differentiating the General Education Program According to the Needs of Gifted Students). S. Emir (Ed.), *Özel Yeteneklilerin Eğitiminde Program Tasarımı* içinde (s.25-43). Ankara: Pegem Akademi.
- Tortop, H. S. (2015). Üstün zekâlıların eğitiminde farklılaştırılmış öğretim müfredat farklılaştırma modelleri. İstanbul: Genç Bilge Yayıncılık.
- Tortop, H. S. (2018). Üstün yetenekliler ahlak ve karakter eğitimi programı (ÜYAKEP) Modeli (Moral and Character Education Program for Gifted (MCEPG)). *Journal of Gifted Education and Creativity*, 5(2), 100-111.
- VanTassel-Baska, J. (2003). Selecting instructional strategies for gifted learners. *Focus on exceptional children*, 36(3), 1-12.
- VanTassel-Baska, J., Hubbard, G. F., & Robbins, J. I. (2021). Differentiation of instruction for gifted learners: Collated evaluative studies of teacher classroom practices. In S. R. Smith (Ed.), *Handbook of giftedness and talent development in the Asia-Pacific* (pp.945-979). Springer.
- VanTassel-Baska, J., & Stambaugh, T. (2006). *Comprehensive curriculum for gifted learners*. Pearson Education.
- Wallace, B., & Shaughnessy, M. F. (2012). Cover slashes, Ethical values and actions, Social and emotional development, Problem-solving and Creativity. *Gifted Education International*, 28(3), 239-240.
- Walton, R., & Vialle, W. (2021). Spirituality and giftedness: threading the path of identity. In S. R. Smith (Ed.), *Handbook of giftedness and talent development in the Asia-Pacific* (pp.257-282). Springer.

- Yıldırım, D. T. (2016). Üstün yetenekliler için değerler eğitimi dersinin önemi (*The importance of values education for the gifted students*). *Current Research in Education*, 2(2), 99-120.
- Yıldırım, A., & Şimşek, H. (2013). *Sosyal bilimlerde nitel araştırma yöntemleri* (*Qualitative research methods in the social sciences*). (9. Basım). Ankara: Seçkin Yayıncılık.

