Din Kültürü ve Ahlak Bilgisi Öğretiminde Öğrenci Merkezli Öğretimin Akademik Başarı Üzerindeki Etkisi

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Öz: Bu araştırmada din kültürü ve ahlak bilgisi öğretiminde öğrenci merkezli öğretimin öğrencilerin akademik başarıları üzerindeki etkisi ortaya konulmaya çalışılmıştır. Bu nedenle çalışmada nicel araştırma yaklaşımlarından meta analiz yöntemi benimsenmiştir. Çalışma kapsamında Yükseköğretim Kurumu tez merkezinde tarama yapılmış, dahil olma kriterlerini karşılayan 16 çalışma araştırmaya alınmıştır. Çalışmalarda yayın yanlılığı bulunup bulunmadığına karar vermek için Rosenthal ve huni grafik tekniklerinden yararlanılmıştır. İki yönteme göre de çalışma kapsamına alınan araştırmaların yayın yanlılığından uzak olduğu görülmüştür. Analizlerde öncelikle 16 bağımsız araştırmadan 20 bağımsız etki değeri türetilmiş ve her bir öğrenci merkezli öğretim uygulaması bağımsız olarak yorumlanmıştır. Çalışmanın devamında ise bu çalışmaların birleştirilmiş etki değeri hesaplanmıştır. Birleştirilmiş etki değerinin yorumlanmasında rastgele etkiler modelinden yararlanılmıştır. Çalışmaların birleştirilmiş etki değeri 0.969 olarak hesaplanmıştır. Bu kapsamda çalışmada elde edilen bulgulara göre din kültürü ve ahlak bilgisi öğretiminde öğrenci merkezli öğretim uygulamalarının öğrencilerin akademik başarıları üzerinde geniş bir etkisi olduğu sonucuna ulaşılmıştır.

Anahtar Sözcükler: Öğrenci merkezli öğretim, din kültürü ve ahlak bilgisi, akademik başarı, meta-analiz.

The Effect of Student-Centered Teaching on Academic Achievement in Religious Culture and Moral Knowledge Education

Abstract: In this study, the effect of student-centered teaching on students' academic achievement in religious culture and moral knowledge teaching was tried to be revealed. For this reason, meta-analysis method, one of the quantitative research approaches, was adopted in the study. Within the scope of the study, a search was made in the thesis center of the Higher Education Institution and 16 studies that met the inclusion criteria were included in the study. Rosenthal and funnel graph techniques were used to decide whether there was publication bias in the studies. According to both methods, it was seen that the studies included in the study were free from publication bias. In the analyses, firstly, 20 independent effect values were derived from 16 independent studies and each student-centered teaching practice was interpreted independently. In the continuation of the study, the combined effect value of these studies was calculated. Random effects model was used in the interpretation of the combined effect value. The combined effect value of the studies was calculated as 0.969. In this context, according to the findings obtained in the study, it was concluded that student-centered teaching practices in religious culture and ethics teaching have a wide effect on students' academic achievement.

Keywords: Student-centered teaching, religious culture and ethics, academic achievement, meta-analysis.

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Introduction

The teaching of Religious Culture and Moral Knowledge begins in the 4th grade of primary school, and its fundamental aim is to instill religious knowledge, skills, values, and ethics. Given the individual and societal significance of religious education, it can be stated that it is a sensitive value that should not be left to informal environments (Burak, 2017). Similar to many countries, religious education in Turkey is conducted within the framework of specific curriculum programs in schools. Consequently, religious education occurs through a teaching process designed by teachers in accordance with these programs, during which teachers benefit from various methods, techniques, and materials. The teacher's primary responsibility in the teaching process is defined as creating effective and efficient learning environments (Erden and Akman, 2001). Based on this premise, it can be asserted that it is critical for teachers to identify and utilize the most effective methods, techniques, and materials to meet the objectives of the course in religious education.

Currently, the curriculum updated in 2018 is utilized for the teaching of Religious Culture and Moral Knowledge. The curriculum emphasizes that the fundamental teaching approach is centered around constructivism, skill-based learning, and multiple intelligences, highlighting a student-centered framework (Ministry of National Education, MoNE, 2018). Therefore, teachers need to move beyond traditional teaching approaches in religious culture and moral knowledge education and adopt teaching methods that focus on the student. In this context, Baeten, Struyven, and Dochy (2013) describe student-centered teaching through three key features: (1) ensuring active participation of students to construct knowledge, (2) the teacher guiding and directing the learning process, and (3) facilitating socialization and presenting real problem situations. Thus, student-centered learning or teaching is supported by social constructivism (Yaşar et al., 2015). It can be stated that in religious culture and moral knowledge education, a student-centered teaching approach can be achieved through the use of various methods that allow students to take responsibility, actively participate, learn by doing and experiencing, and interact.

There are numerous methods and techniques that center on students. These approaches are alternatives to the traditional model, where the teacher is the focal point and the student remains a passive recipient. Therefore, collaborative learning, project-based learning, problem-based learning, multiple intelligence learning, drama, differentiated learning, active learning, experiments, and discovery learning, among others, inherently aim to engage students and place them at the center (Kurt et al., 2024). In this context, teachers of religious culture and moral knowledge can utilize a wide array of methods and techniques to provide student-centered teaching. However, the extent to which these student-centered methods and techniques effectively and efficiently deliver instruction remains a matter of inquiry. The literature indicates that student-centered teaching has a significant impact on students' academic success and attitudes toward classes across various disciplines. For instance, Kurt et al. (2024) reported on academic success in life sciences education, Yaşar et al. (2015) in social studies education, Çelik (2024) in Turkish language education regarding listening comprehension, and Uyandıran and Tarım (2024) in mathematics education concerning problem-solving skills, while Yağan (2022) reported that student-centered teaching positively impacts attitude in the overall teaching process.

Although studies exist that demonstrate the effects of student-centered teaching on academic success, attitudes, reading comprehension, and problem-solving skills in different teaching fields, research on the effects of student-centered teaching on academic success specifically in religious culture and moral knowledge education is limited. Given that the subject matter of Religious Culture and Moral Knowledge education is based on abstract concepts, there is a need for studies that concretize the lessons through methods and techniques

centered on students. Furthermore, academic success is considered a tangible measure of how effectively teaching objectives are reached within an educational process (Burak and Gültekin, 2022). Therefore, focusing on academic success is important for the concrete examination and interpretation of the methods and techniques used in the teaching of religious culture and moral knowledge, which is evaluated on an abstract basis. In this context, this study aims to highlight the impact of student-centered teaching on students' academic success in Religious Culture and Moral Knowledge education. Accordingly, the study seeks to answer the question: "What is the impact of student-centered teaching on academic success in Religious Culture and Moral Knowledge education?" It is expected that the study will contribute to the field of religious culture and moral knowledge teaching and to the teachers involved.

Method

This study aims to determine the overall impact of student-centered teaching methods on academic achievement in the teaching of Religious Culture and Moral Knowledge. In this respect, the studies in the literature that have tested the effects of teaching methods outside traditional approaches within the scope of Religious Culture and Moral Knowledge education constitute the subject of this research. Therefore, the study focuses on experimental studies where student-centered teaching methods are the independent variable, while academic achievement and attitudes are the dependent variables. This research is designed as a meta-analysis study centered on this focus. Meta-analysis studies are works that combine and summarize the results of different studies within the same focus (Karadavut, 2022; Topkaya et al., 2023). As such, meta-analysis studies are secondary research where a large number of studies are systematically examined and summarized (Glass, 1976).

Meta-analysis research is conducted through a three-stage approach: (i) conducting a literature review and neutrally selecting appropriate studies based on research aims and questions, (ii) coding the selected studies and determining the effect size for each study, and (iii) calculating and interpreting the overall effect size of the studies (Dinçer, 2014). Accordingly, in this study, the literature was reviewed for experimental research that tested the effects of methods outside traditional teaching in the context of Religious Culture and Moral Knowledge education. The studies in the literature were examined and coded methodologically (sample size, data collection process, data analysis techniques, etc.), and subsequently, statistical interpretations of the findings were analyzed (arithmetic mean, standard deviation, t-value, p-value, etc.). In the final stage, the effect sizes of the examined studies were calculated using statistical techniques.

Data Collection Process

The focus of this study is on graduate theses scanned in the National Thesis Center of the Higher Education Council (HEC). In line with the study's purpose, some graduate theses were included in the meta-analysis. Therefore, inclusion criteria were applied in the selection of studies, and those not meeting the criteria were excluded from the research. The inclusion criteria used for study selection are as follows:

- The study must have been conducted within the context of Religious Culture and Moral Knowledge education,
- There must be open access permission, and the study should have been conducted within the last 20 years,
- The study must use an experimental model,
- The study must include both experimental and control groups,

-    Data must be obtained using pre-tests and post-tests

The search for studies according to the relevant criteria was conducted between 12.09.2024 and 31.10.2024. During the screening conducted in the thesis center, the keywords "Din kültürü ve Ahlak Bilgisi," "Religious Culture and Ethical Knowledge," "Religious Culture and Moral Knowledge," "Akademik Başarı," "Academic Achievement," and "Academic Success" were used, resulting in 349 studies. Following the examination based on the inclusion criteria, 16 studies were included in the research. These studies were coded primarily using a form, where the coding process involved the author, year, sample size, participant characteristics, the methods used in the experimental study, and statistical findings.

Data Analysis

In this study, 20 effect sizes were determined from the 16 studies. Hedge's g was used to calculate the effect sizes, while the interval criteria suggested by Thalheimer and Cook (2002) for "g" effect size calculations within level classification were taken into account:
-0.15 to 0.15: insignificant level
-0.15 to 0.40: small level
-0.40 to 0.75: moderate level
-+0.75 to 1.10: large level
-1.10 to 1.45: very large level

Two different models are recommended for interpreting effect sizes in meta-analysis (Batdı, 2014; Üstün and Eryılmaz, 2014). The first model is the fixed effects model (FEM), and the second is the random effects model (REM). Due to the very limited conditions under which SEM is suitable, the multitude of its assumptions, and the difficulty in ensuring homogeneity (Schmidt et al., 2009), the REM model was preferred for this study. The Comprehensive Meta Analysis (CMA) software package was used for analyzing the data of this research.

Publications Bias

One of the most significant limitations of meta-analysis studies is the presence of publication bias (Üstün and Eryılmaz, 2014). The existence of publication bias can reduce the validity and reliability of study results and may lead to erroneous conclusions. In this context, the Rosenthal method was employed in the current study to determine whether there is a publication bias problem, and a funnel plot analysis was conducted. The Rosenthal method involves estimating how many counter studies would need to be conducted to bring the effect size obtained from the analyses to a value of "0" (zero) (Burak, 2023; Özcan, 2008). In this study, 20 effect sizes were derived from 16 studies. According to the Rosenthal method, in order to assert that the effect sizes reached in this study are biased, there would need to be 1201 opposing studies related to academic achievement. Therefore, it can be stated that the effect sizes obtained in the current study do not indicate publication bias.

To determine the presence of publication bias, the funnel plot technique was also utilized in this study. The funnel plot presents the distribution of the effect sizes of each independent study around the overall effect size. The scattering of independent studies within the funnel in the graph and its symmetry indicates that there is no publication bias (Dinçer, 2014). Figure 1 presents the funnel plot of the current study.
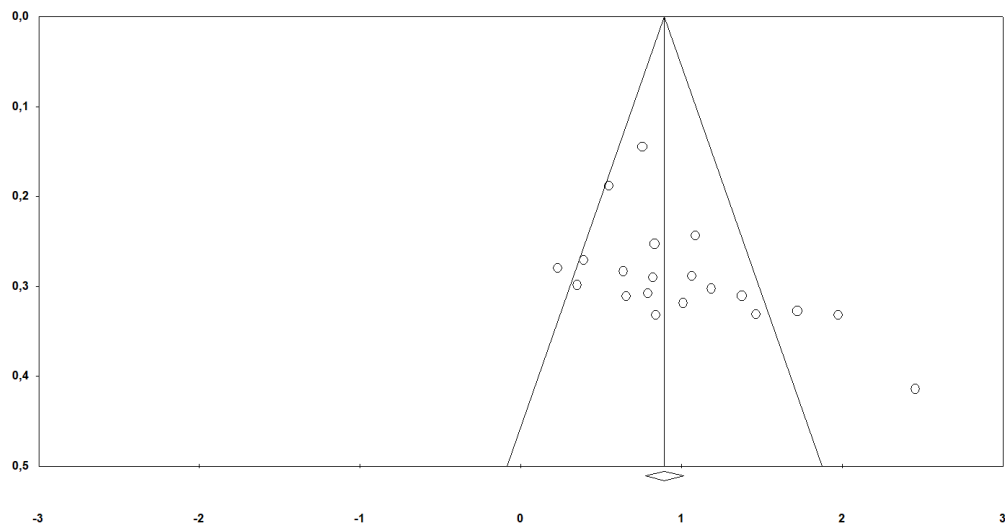
Figure 1. The Funnel Plot

According to the funnel plot in Figure 1, the independent effect values of each study were generally scattered within the funnel. Based on this, it can be said that there is no publication bias in the current study.

Results

In the present study, in order to find an answer to the research question 'What is the effect of student-centred teaching on academic achievement in religious culture and moral knowledge teaching', firstly the independent effect size of each study was calculated and then the general effect size was determined and interpreted. In this context, the findings of 20 independent effect sizes and confidence intervals and study weights obtained from 16 experimental studies in which the effect of student-centred teaching on academic achievement in religious culture and ethics teaching was tested are given in Table 1.

Table 1
Independent Effect Values of Studies Related to Academic Achievement

Studies	The methods of the student-centred teaching	Effect size	Confidence interval		Study Weights (FEM)	Study Weights (REM)
			Lower	Upper		
Orhan, 2024	Peer Teaching	0.835	0.339	1.330	5.66	5.48
Yörük, 2007	Multiple Intelligences	1.378	0.769	1.987	3.75	4.74
Çeken, 2024	Educational Game	0.351	-0.234	0.937	4.06	4.89
Nursel, 2017	Educational Game	1.089	0.612	1.567	6.09	5.39
Ekinci, 2020	Informal Learning	0.549	0.180	0.918	10.21	6.33
Türker, 2024	Educational Game	2.458	1.646	3.027	2.11	3.63
Erim, 2019	Problem Based Learning	0.640	0.084	1.195	4.50	5.08
Özcan, 2021**	Flipped Learning	0.759	0.475	1.045	17.38	6.46
Özcan, 2021*	Flipped Learning	0.231	-0.317	0.779	4.52	5.43
Özcan, 2021*	Flipped Learning	1.465	0.816	2.144	3.30	4.50
Özcan, 2021*	Flipped Learning	1.066	0.500	1.631	4.34	5.01
Özcan, 2021*	Flipped Learning	0.394	-0.137	0.935	4.92	5.24
Demir, 2016	Brain Based Teaching.	1.979	1.326	2.627	3.28	4.49
Çelik, 2016	Mind Map	1.188	0.595	1.781	3.95	4.84
Kazancı, 2019	Biography	1.013	0.388	1.637	3.56	4.65

Kaya, 2013*	Multiple Intelligences	0.791	0.187	1.394	3.81	4.78
Kaya, 2013*	Multiple Intelligences	0.841	0.191	1.492	3.28	4.49
Kaya, 2013*	Multiple Intelligences	0.657	0.047	1.267	3.73	4.74
Yörük, 2007*	Multiple Intelligences	0.822	0.253	1.391	4.29	4.99
Yörük, 2007*	Multiple Intelligences	1.722	1.081	2.164	3.37	4.54

*Studies were repeated in different samples. **Different samples were combined in the study.*

In Table 1, 20 effect values produced from 16 different studies, lower and upper limits of these values and study weights according to different models are given. According to Table 1, the independent effect values of the studies took values between 0.231 and 2.458. Therefore, it is understood that each study independently has an effect that will create a positive effect size. Accordingly, it can be said that the academic achievement scores in the experimental studies in which the effect of student-centred teaching on academic achievement in religious culture and moral knowledge teaching was tested differed significantly in favour of the experimental groups. In other words, it can be stated that student-centred teaching in religious culture and moral knowledge teaching positively affects academic achievement.

When the independent effect values of the studies in Table 1 were classified qualitatively, it was found that 3 studies were small (between 0.15-0.40), 3 studies were medium (0.40-0.75), 8 studies were large (0.75-1.10), 3 studies were very large (1.10-1.45) and 3 studies were at an excellent level (1.45 and above). Therefore, in general, it can be said that each study has a large or above effect size. The combined effect values of the relevant studies according to study weights and different meta-analysis models are given in Table 2.

Table 2
Combined Effect Sizes of Studies According to Different Models

Models	n	Z	p	Q	χ^2	Effect Size	Confidence Interval	
							Lower	Upper
Fixed (FEM)	20	14.861	0.000	56.975	30.144	0.894	0.777	1.012
Random (REM)	20	9.001	0.000	56.975	30.144	0.969	0.758	1.180

Table 2 shows that Z values are statistically significant in FEM and REM models (14.861; 9.001, $p<0.05$). From this point of view, it can be said that the combined effect values obtained in different models as a result of meta-analysis are also significant. Due to the limitations of the current study, the REM model was preferred. However, in order to reveal the validity of the models, the Q value obtained was compared with the χ^2 table value at alpha 0.05 and 19 degrees of freedom. It was determined that the Q value presented in Table 2 was 56.975 and the critical value of the χ^2 distribution was 30.144. Therefore, it was observed that the Z value was greater than the critical value of χ^2 distribution, that is, it was significant. From this point of view, it was determined that the effect sizes of the studies showed a heterogeneous distribution and it was determined that it was appropriate to use the REM model to determine the general effect size. According to the REM model, the combined effect value of the independent studies was calculated as 0.969, and the lower limit of this value in the 95% confidence interval was 0.758 and the upper limit was 1.180. According to these values, it was determined that student-centred teaching had a large effect on academic achievement in religious culture and moral knowledge teaching.

Discussion, Conclusions and Suggestions

In this study, it was tried to reveal the effect of student-centred teaching on academic achievement in religious culture and moral knowledge teaching. In this context, 25

undergraduate education theses that were scanned in HEC Thesis Centre and met the inclusion criteria constituted the data of the study. In the analysis process, 20 effect sizes produced from 16 studies were handled independently. Then, based on these effect sizes, the combined overall effect size was calculated and interpreted. According to the findings obtained in the study, it was seen that student-centred teaching had a statistically significant and positive effect on academic achievement in religious culture and moral knowledge teaching. It was determined that this effect was in favour of the experimental groups teaching with student-centred teaching and against the control groups teaching with traditional teaching methods other than student-centred teaching. In this context, it is understood that student-centred teaching in religious culture and moral knowledge course affects students' academic achievement more positively than traditional teaching.

According to the findings obtained in this study, each independent study of student-centred instruction had a positive effect on academic achievement in religious culture and moral knowledge teaching. When the independent effect values of the studies were analysed, the studies conducted by Türker (2024), Demir (2016) and Özcan (2024) differed from the other studies by showing excellent effect values. Türker (2024), who has the highest effect value, used educational games in his study. In general, educational games increase students' participation in the lesson, increase their motivation and provide them with a sense of success (Alonso-Fernandez et al., 2020). Toraman, Çelik, and Çakmak (2018) conducted a meta-analysis study to reveal the effect of educational games on academic achievement within the scope of game-based learning. As a result of the study, it was determined that educational games had a large effect on academic achievement (0.861). In Türker's (2024) study, it was found that educational games had an excellent independent effect on academic achievement (2.458). This may be due to the nature of religious culture and moral knowledge teaching. Because religious culture and moral knowledge teaching deals with abstract phenomena as a subject area and it is known that the concretisation process is difficult. The fact that educational games provide learning by doing-living may have been effective in terms of concretisation, but this situation may also have resulted from the bias in sample selection (Burak, 2022). Because the purposeful selection of the sample may cause a bias and cause extreme results from the effect value. On the other hand, in Demir's (2016) and Özcan's (2024) studies, it was observed that flipped learning environments had an excellent effect on academic achievement in religious culture and moral knowledge teaching. In different meta-analyses in the literature, it has been reported that flipped learning environments have a positive effect on academic achievement (Karagöl & Esen, 2018; Koruyucu & Tabak, 2020). The findings obtained in the current study revealed that flipped learning environments in religious culture and moral knowledge teaching affect academic achievement at an excellent level. In the literature, it is generally reported to have a moderate or above effect. However, Karagöl and Esen (2018) revealed in their meta-analysis study that the effect of flipped learning approach on academic achievement is higher in small groups. In this context, it can be thought that this differentiated effect value may be due to the sample size.

According to the findings obtained in the present study, the combined effect value of the studies included in the meta-analysis positively affects academic achievement to a large extent. Therefore, it was found that student-centred teaching in religious culture and moral knowledge teaching has a positive and significant effect on academic achievement. In the literature, some studies have reported that student-centred teaching generally affects academic achievement positively. For example, Kurt et al. (2024) in life science teaching and Yaşar et al. (2015) in social studies teaching found that student-centred teaching positively affected academic achievement. In this context, the findings obtained in the current study overlap with different teaching areas in the literature. This situation confirms that student-centred teaching has a widespread effect on the basis of the field.

According to the findings obtained in the study, it was concluded that student-centred teaching environments significantly increase academic achievement in religious culture and moral knowledge teaching. In this direction, teachers can benefit from methods and techniques such as educational games, flipped learning, brain-based learning, multiple intelligence and peer teaching from student-centred activities to create an effective and efficient teaching environment in religious culture and ethics teaching. In this context, teachers can make adaptations in line with the achievements, student characteristics (Burak & Gültekin, 2024) and available opportunities while using these methods and techniques whose effects have been revealed. Because it may be a limitation to reduce the creation of an effective teaching environment only to the characteristics of the method used.

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