The Effect of Informal Learning Environments on Students' Achievement and Attitude Levels of Religious Culture and Moral Knowledge (RCMK) Course

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Abstract

This study aimed to examine the effect of informal learning environments on students' academic achievement and attitude levels in the Religious Culture and Moral Knowledge (RCMK) course. The study used a pretest-posttest experimental control group, quasi-experimental design model. An academic achievement test and Religion Culture and Moral Knowledge Course Attitude Scale were used as measurement tools. The study group comprised 116 students who continued their education in a private school at 4th and 5th grades. For the comparisons of attitude scale and achievement scores, independent samples t-tests were used. Before the posttests, the experimental group students attended mosque trips organized for the "Let's Get to Know the Mosque" unit. As a result of the study, it was observed that the attitude and academic achievement levels of the experimental group students towards the RCMK course increased after the implementation. It was found that informal learning had a significant and positive-positive effect on students' attitudes towards the course, and this effect was mostly on trust, benefit, interest, and liking sub-dimensions of the attitude scale, respectively.

Keywords: *Italic Informal Learning, Academic Achievement, Attitude, Religious Culture*

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Introduction

Today, technology in all social life areas pulls education and training out of the formal sphere. Especially access to information on the internet with technological tools such as computers, tablets, and phones has taken informal learning to entirely different levels. Individuals desire to learn actively outside of what is offered to them. This situation also increases the implicit, reactive, and intentional learning ability described by Eraut (2004) for informal learning. While individuals investigate everything curiously, people can deepen their research and end it whenever they want, as they unconsciously see and learn new things. Since informal learning is an indispensable part of life, it is desired to make it a manageable phenomenon rather than a phenomenon to be feared.

On the other hand, as Selçuk (1999) mentioned, the possibility of damaging information received from informal channels should also be considered. This possibility does not mean that individuals should avoid informal education, which has a vital role in eliminating the disadvantages, such as transferring abstract contents that are emphasized in formal education. Türkmen (2010) states that educators are responsible for realizing informal learning. Informal learning is the understanding of the value of learning while living in the environment in which the individuals are living, discovering themselves, realizing their abilities, knowing their strengths and weaknesses, and gaining communication skills. Informal learning is a learning style that attaches importance to experiences considering different learning methods (Çağlayan, 2009).

In contrast, formal education is a type of education with planned goals, pre-established programs, and regular school progress under constant control (Taşpınar, 2017). Besides, formal education is an approach that adopts a learning-teaching process which prioritizes students' interests and needs. Within this formal formation, the implicit program is another program that is not included in the plan and program and is wholly included in the student's daily life. It is an informal program where the student learns from family, school, teacher, or anyone in his or her friends' circle. It occurs spontaneously without being aware of the person's family, on the street, at work, at school, and in all areas of life (Fidan, 2012).

The harmony and interaction of the school with the immediate environment within the scope of the implicit program are effective in raising the individual to be more sensitive and conscious (Çağlayan, 2009). Informal learning is more permanent as the student takes an active role during learning. From the perspective of the Religious Culture and Moral Knowledge (RCMK) course, individuals should not lie, rather they should be fair and respectful. Students effectively learn social values, such as behaviors, through informal education. How would it be enough to verbally include these expressions in classroom settings if it is not practiced? Individuals care more about what they experience than what they hear (Taşpınar, 2009).

While dealing with religious and moral learning objectives in the RCMK curriculum, attention should be paid to using methods and techniques. Teachers of RCMK courses should consider the environment, educational environments, students' readiness, general culture, and levels of religious issues to acquire the necessary skills according to the RCMK curriculum prepared by the Ministry of National Education (MoNE, 2018). One of the courses that can benefit most from informal learning techniques is the RCMK course. The MoNE curriculum emphasizes both formal and informal education (Binbaşıoğlu, 1988).

In order for students to reach their learning goals in the RCMK course, the use of appropriate trips in the RCMK course will contribute to the students' achievement of both cognitive and affective goals (Göküş, 2020). According to Temür (2007), the use of excursions in the RCMK course increases the Permanence of the Learned and supports the other methods used. In addition, it saves students from the boringness and monotony of the classroom environment, since students learn by doing and experiencing (Temür, 2007). One of the benefits of teaching the RCML course outside the classroom with techniques such as the excursion technique is that it enables students to achieve cognitive and affective high-level gains by creating rich situations in their own construction of knowledge. In addition, out-of-class learning environments enable students to develop positive religious feelings, and adopt and apply moral rules (Güngör, 2022).

This study examined the effect of students' informal learning environments on students' attitudes and academic achievement levels in the RCMK course.

The research problem can be mentioned as whether informal learning environments affect the academic achievement and attitude levels of 4th and 5th-grade students in the Religious Culture and Moral Knowledge Course. Depending on this fundamental question, answers were also sought for the sub-questions presented below:
1. What is the level of achievement and attitude of 4th and 5th-grade students in the RCMK course?
2. Is there a significant difference between the scores of the experimental and control group students in the RCMK attitude scale and the academic achievement posttest?
3. Is there a significant correlation between the scores of the RCMK attitude scale and the academic achievement test?

Method

Research Design
This study aimed to examine the effect of informal learning environments on the academic achievement and attitude levels of 4th and 5th-grade students in the RCMK course, so the pretest, posttest, experimental-control group quasi-experimental design model was used. The experimental studies aim at testing the effect of the differences created by the independent factor on the dependent variable. The primary purpose of experimental designs is to test the cause-effect relationship between variables (Büyüköztürk et al., 2018). In the quasi-experimental model, the participants of the control and experimental groups are not randomly assigned from the sample

pool; one of the existing groups is determined as the experimental, and the other as the control group (Karasar, 2017).

The independent variables of the study took the students on a mosque tour as an informal learning environment and implemented the current RCMK curriculum; the dependent variables of the study were the RCMK course attitude and academic achievement levels regarding the RCMK course. The quasi-experimental design for this study is presented in Table 1.

Table 1. Experimental design of the study

Groups	N	Pretest	Implementation	Posttest
Experimental	55	RCMK-AS[1] AAT[2]	RCMK Curriculum + Informal Learning Environment (Trip to Mosque)	RCMK-AS[1] AAT[2]
Control	61	RCMK-AS[1] AAT[2]	Only RCMK Curriculum	RCMK-AS[1] AAT[2]

RCMK-AS[1] = RCMK Attitude Scale   AAT[2]= Academic Achievement Test

At the beginning of the study, the attitude scale for the Religious Culture and Moral Knowledge course and the academic achievement test (related to the unit of Let's Get to Know the Mosque) were applied as the pretest to check the attitude and academic achievement levels of experimental and control groups. After implementing the RCMK curriculum, making a trip to a mosque for the experimental group, and implementing the RCMK curriculum only in the control group, the RCMK attitude scale and the academic achievement test were given as posttests.

Study Sample

The study sample of this study consisted of 116 students who continued their education at 4th and 5th grades of a private educational institution operating under the Ministry of National Education in the district of Ümraniye in Istanbul in the academic year of 2018-2019. 40.5% of the students were female, and 59.5% were male.

Data Collection Tools

A personal information form, an achievement test developed by the researcher, and an attitude scale were used to examine the effect of the informal learning method on the academic achievement and attitude levels of 4th and 5th-grade students in the RCMK course. To determine the attitude levels of the 4th and 5th-grade students participating in the study, the attitude scale for the RCMK coursedeveloped by Özdemir and Çelik (2017), that its validity-reliability study was conducted with 537 7th-grade students, was used. The scale measured students' attitudes towards the RCMK course with five sub-dimensions: liking, interest, trust, will, and benefit.
 In the scale development study conducted by the researchers, it was determined that the reliability coefficients for the scale dimensions ranged from .634 to .835, and the overall reliability

coefficient (Cronbach's Alpha) was .890. The items of the scale, which are arranged in a five-point Likert type, are evaluated by the students through choosing one of the options ranged from "I absolutely disagree" (1) to "I absolutely agree" (5). The high score indicates that the attitude level of the students towards the RCMK course is high for that dimension.

In order to check the validity and reliability of the RCMK Attitude Scale for this study, the reliability coefficient (Cronbach's Alpha) values were calculated, and the reliability coefficient(α) is .873 for the liking dimension of the scale;.770 for the interest dimension;.719 for the trust dimension; .752 for the will dimension, and .826 for the fifth sub-dimension, benefit.
When 27 RCMK course attitude scale items were included in the analysis together, the overall reliability coefficient was .914. If the Cronbach's Alpha(α) value is $.00 \leq \alpha < .40$, the scale is not reliable; if it is $.40 \leq \alpha < .60$, the reliability of the scale is low; if it is $.60 \leq \alpha < .80$, the scale is quite reliable, and if it is $.80 \leq \alpha < 1.00$, the scale is highly reliable (Kalaycı, 2006). Accordingly, it has been found that the attitude scale for the RCMK course and its sub-dimensions have a high level of reliability and are suitable for the study.

In the study, an academic achievement test consisting of 20 multiple-choice questions developed by the researchers for the unit "Let's Get to Know the Mosque" was used by the researchers to determine the academic achievement level of the students for the RCMK. The difficulty and discrimination indices were calculated within the academic achievement test scope, and Cronbach Alpha (α) coefficients were found. In a test, the rate at which the student's questions are answered correctly gives the difficulty level ranging from zero to one. The low number of correct answers to the questions asked brings the value of those questions closer to zero. If the value of the questions asked approaches zero, it indicates they are very difficult. Questions with values between .00 and .19 are considered as "very difficult"; questions valued between .20 and .39 are "difficult"; questions valued between .40 and .59 are "medium difficulty"; questions with a value between .60 and .79 are evaluated as "easy" and questions with a value between .80 and 1.00 are considered as "very easy" (Özçelik, 2013).
On the other hand, while considering the discrimination levels of the questions asked, discrimination index coefficients should not be less than .20." (Baykul, 2000). The average difficulty index for the 20-item academic achievement test was found to be .54 and the discrimination index was .59. The difficulty values of the questions in the achievement test preparation for the unit "Let's Get to Know the Mosque" is between .35 and .72, and it is seen that "medium difficulty" questions are predominant. These results indicate that the items in the academic achievement test show a balanced distribution. The discrimination coefficients of the questions vary between .43 and .81, and it is understood that all questions show distinctive features.

Finally, as a result of the reliability analysis applied to the overall achievement test preparation for the unit "Let's Get to Know the Mosque," the reliability coefficient was calculated to be .88. The correlation values were found to be between .35-.82. When the results are evaluated together, it is understood that the reliability of the achievement test preparation for the study is sufficient and at a high level.

Data Collection

1. Before starting the "Let's Get to Know the Mosque" unit, the researchers conducted a pretest for the RCMK course attitude scale and the academic achievement test for the experimental and control group students.

2. The experimental group students were taken on a mosque tour about the unit "Let's Get to Know the Mosque." They were introduced to the mosque's history, architecture, departments, and functions in its natural environment. As for the control group, within the unit "Let's Get to Know the Mosque," the mosque sections were explained to the students in the control group with the current Religious Culture and Moral Knowledge Curriculum, and they were given homework on the subject.

3. After the treatment, the attitude scale for the RCMK course and the academic achievement test were administered as a posttest to the experimental and control groups.

Data Analysis

Statistical analysis was performed with the data obtained from 4th and 5th-grade students through the attitude scale for the RCMK course and the academic achievement test developed for the unit "Let's Get to Know the Mosque." Depending on the study's purpose, the data groups' normality distributions were checked with the Kolmogorov-Smirnov test to choose which statistical techniques should be used before starting the statistical analysis. According to Pallant (2005), there should not be a significant difference in the result of the test performed to show the normal distribution of the researched data group (p> .05). The general and sub-dimensions of the RCMK course attitude scale and the distribution of academic achievement pretest and posttest scores showed normality (p> .05).

Findings

Attitude and Academic Achievement Tests' Pretest Scores

The pretest scores of the measurement tools were compared to investigate the pre-study equivalence of the students participating in the study (Table 2).

Table 2. t-test Analysis for the Pretest Scores of Attitude Scale and Academic Achievement Test in the RCMK Course

	Group				t-test		
		N	*M*	*SD*	*t*	*df*	*p*
Liking	Experimental	55	3.93	.81	.04	114	.972
	Control	61	3.93	.76			
Interest	Experimental	55	3.77	.60	.06	114	.955
	Control	61	3.76	.78			
Trust	Experimental	55	3.98	.81	.01	114	.989
	Control	61	3.98	.60			
Will	Experimental	55	2.97	.74	1.40	114	.164
	Control	61	3.18	.87			
Benefit	Experimental	55	4.42	.87	.28	114	.779
	Control	61	4.46	.69			
RCMK Attitude Scale	Experimental	55	3.81	.57	.48	114	.632
	Control	61	3.86	.56			
Academic Achievement Test	Experimental	55	51.73	14.51	.17	114	.612
	Control	61	50.00	15.10			

To see if there is a significant difference between the 4th and 5th grade experimental and control group students participating in the study, their achievement test scores before the study and the RCMK course attitude scale and the achievement test scores of the course were examined with the independent samples t-test, and it was found that there was no significant difference (p > .05).

Attitude and Academic Achievement Posttest Scores

The independent samples t-test conducted to compare the posttest scores of the experimental and control group students are presented in Table 3. Cohen's d was calculated to determine the effect size to determine if there is a significant difference between the students' posttest scores. "Cohen's d value is considered as "small" up to .20; "medium" up to .50; "large" up to .80, and "enormous" when it is above .80 (Can, 2017; Leech et al., 2005).

Table 3. t-test Analysis for the Posttest Scores of Attitude Scale and Academic Achievement Test in RCMK Course

Dimension	Group	N	M	SD	t	df	p
Liking	Experimental	55	4.21	.67	2.10	114	.024
	Control	61	4.06	.77			
Interest	Experimental	55	3.97	.52	2.16	114	.019
	Control	61	3.81	.86			
Trust	Experimental	55	4.26	.72	2.29	114	.009
	Control	61	4.07	.70			
Will	Experimental	55	3.33	.64	1.29	114	.127
	Control	61	3.27	.88			
Benefit	Experimental	55	4.68	.98	2.35	114	.007
	Control	61	4.44	.97			
RCMK Attitude Scale	Experimental	55	4.09	.51	2.18	114	.014
	Control	61	3.93	.63			
Academic Achievement Test	Experimental	55	81.00	13.59	2.97	114	.004
	Control	61	71.23	20.69			

It was found that there is a significant difference (in terms of general and four sub-dimensions) between the attitude posttest scores of the experimental and control group students towards the RCMK course. Considering students' liking attitude towards the course [t(114)=2.10; p= .024]; interest attitude [t(114)=2.16; p = .019]; trust attitude [t(114)= 2.29; p = .009] and benefit attitude [t(114)= 2.35; p= .007], a significant difference was found between the posttest levels in favor of the experimental group students. The effect size values (d_{Cohen}) between experimental and control groups' attitude scale sub-dimensions were obtained as .25 for the benefit sub-dimension; .27 for the trust sub-dimension; .23 for the interest sub-dimension, and .21 for the liking sub-dimension. On the other hand, the teaching method's effect on the students' will dimension was not found to be significant.

It was found that there is a significant difference in favor of the experimental group students between the general attitude points of the students towards the RCMK course [t(114)=2.18; p= .014]. It is seen that the general attitude posttest scores of the experimental group students towards the course ($X_{Experimental}$= 4.09) were higher than the control group students ($X_{Control}$= 3.93). It is also seen that the effect of the mosque trips and the education provided following the curriculum on the general attitude of the students towards the course is significant and 'moderate' (d_{Cohen} = .28).

It was found that there was a significant difference between the posttest scores of the experimental and control group students' academic achievement test preparation for the unit "Let's Get to Know the Mosque" [t(114)= 2.97; p= .004] and this difference was found to be in favor of the students in the experimental group ($X_{Experimental}$ =81.00; $X_{Control\ group}$ = 71.23). It is seen that the effect of the

mosque trips and the teaching provided following the curriculum on the academic achievement level of the students is significant and large ($d_{Cohen} = .56$).

The Relationship between Experimental Group Students' Attitude towards Religious Culture and Moral Knowledge Course and Academic Achievement Posttest Scores

The Pearson correlation coefficients of the experimental group students participating in the study were included to investigate the relationship between the RCMK Course posttest attitude scores and the achievement test scores (Table4).

Table4. The relationship between the RCMK attitude scale and achievement test scores

RCMK Attitude	Academic Achievement Test
Total Scale	.568*
Liking	.472*
Interest	.629*
Trust	.550*
Will	.071
Benefit	.543*
*p<.001	

It was found that there is a significant and positive relationship at p < .001 level between the achievement test scores of the students in the experimental group and the scores of the RCMK Attitude Scale (excluding the "will" sub-dimension). There is a moderate correlation between the "liking" dimension scores of the RCMK attitude scale and achievement test scores. There are strong correlations between the "interest," "trust", "benefit," and general attitude scores and achievement test scores because the correlation values indicate ".00- .10 as no correlation", " .10-.30 as weak correlation", " .30-.50 as moderate correlation", " .50- .70 as strong correlation", and " .70-1.00 as very strong correlation" (Jawlik, 2016: 132). As the attitude scores of the students in the RCMK Course (except "will") increase, there is an increase in students' achievement test scores.

The results of the regression analysis to see the effect of students' attitude scores (except "Will") on their achievement scores are presented in Table 5 below.

Table 5. Regression analysis of the effect of the experimental group students' attitude scores of the RCMK course on their academic achievement scores

Independent Variable	R	R^2	ANOVA		B	β	t	p
			F	p				
Constant	.57	.323	25.26	.000	1.41		2.83	.007
Total Scale					.68	.568	5.03	.000
Constant	.472	.223	15.20	.000	2.47		6.68	.000
Liking					.34	.472	3.90	.000
Constant	.629	.396	34.75	.000	1.40		3.17	.003
Interest					.71	.629	5.90	.000
Constant	.55	.303	22.99	.000	1.97		4.63	.000
Trust					.52	.550	4.80	.000
Constant	.543	.295	22.13	.000	2.46		7.40	.000
Benefit					.37	.543	4.70	.000

Experimental group students' attitudes towards the RCMK course (in terms of both general and four sub-dimensions) significantly and positively predicted their academic achievement levels (β RCMK General = .568, p <.001; β Interest = .629, p <.001; β Trust = .550, p <.001; β Benefit = .543, p <.001). When the R^2 values are examined, it is seen that the 'Liking' dimension is 22.3%, the 'Interest' dimension is 39.6%, the 'Trust' dimension is 30.3%, and the 'Benefit' dimension is 29.5%. It was found that the general RCMK course attitude score explained the students' academic achievement up to 32.3%.

Discussion, Conclusion and Suggestions

It was found that there is a significant difference in favor of the experimental group students in terms of both general and four sub-dimensions between the attitude posttest scores of the experimental and control group students towards the RCMK course. It was found that the effect of the mosque visits and curriculum-based instruction on the level of liking, benefit, trust, and interest in the course is "medium". Moreover, there was a significant difference between the general attitude levels of the experimental and control group students towards the RCMK course, and this difference is in favor of the experimental group students, and the effect level is also "medium". There was no significant difference between the posttest levels of the will attitude towards the experimental and control group students (p> .05).

To summarize, it was found that the mosque trips and the teaching provided under the curriculum related to the unit "Let's Get to Know the Mosque" had the most significant effect on the attitudes of the experimental and control groups towards the course, respectively, in the dimensions of benefit, trust, interest, and liking. In contrast, it did not significantly affect the students' will.

It was found that there is a significant difference (in favor of the experimental students) between the posttest scores of the experimental and control group students' achievement test preparation for the unit "Let's Get to Know the Mosque". It was observed that the mosque trips made for the unit "Let's Get to Know the Mosque" and the teaching provided following the curriculum had a significant and "large" effect on students' academic achievement. It was also observed that there was a significant and positive relationship between the attitudes of the experimental group students towards the RCMK course (except the will dimension) and their academic achievement level towards the course. When looking at the effect of attitudes on the achievement levels of the course, it was seen that the most prominent effect was caused on the attitude sub-dimensions of trust, benefit, interest, and liking, respectively.

At the end of the study conducted by Altıntaş (2014) on the effects of the informal learning environment prepared for nature and soil with 6th-grade students, no significant difference was found in the attitudes of the students, while a significant increase was found in the achievement scores of the experimental group students. The researcher also states that learning situations in the informal environment positively affect students' perceptions.

It is understood that informal education positively affects students' attitudes towards the RCMK course. Regarding the academic achievement levels of the students, as a result of the comparison of the two groups, it was found that the scores of the students in the experimental group were higher. Şahin (2013) states that although not always, formal education mostly abstracts the contents, causing an adverse effect or inadequate on students' desire to learn. Informal learning can be critical, especially in establishing a connection with what students learn. In the study of Maden and Dincel (2015) on the effect of the informal learning approach on the language development of Turkish students and their views on the Turkish language, it was found that informal learning positively affected both the level of international students' learning Turkish words and their views on Turkish. Taşpınar (2009) states that individuals are more willing and motivated to learn in informal environments because learning is based on need, and learning becomes more permanent when a genuine relationship is established between individuals and their needs. Türkmen et al. (2016), who took primary school 5th-grade students to the botanical garden for the subject of "Classification of Living Beings and the Environment We Live in," observed that as a result of the treatment, students achieved the expected concept learning and their level of desire increased significantly. This result is also consistent with our study. However, the fact that the level of will towards the course itself did not increase seems to be one of the striking results of this study. According to Le Clus (2011), the social and cultural environment in which informal learning occurs is also effective on the formation level, form, and intensity of learning. Therefore, it can be thought that informal learning will also be affected when the social and cultural environment changes, even on a similar subject. It should be remembered that some positive student attitude changes will not be noticeable. Since in informal learning, individuals can move beyond any subject they start and achieve unexpected gains. Bennet (2012) also states that even the learners sometimes does not realize what they learn in informal learning.

The measurability of informal learning is more complicated or indirect than formal learning. Van Noy et al. (2016) state that measuring the unintentional learning episode is challenging, primarily informal learning. The author says that this type of learning can often be observed indirectly. As a result of the study of Keskin and Kaplan (2012), who took the students to the toy museum, they observed that they unexpectedly learned concepts such as peace and respect for labor indirectly. Günay (2019) examined the effect of using informal learning environments together with the formal learning environment in an experimental-control group study. He conducted his study with secondary school students in a botanical garden for the Science Course, and it was stated that one of them complements the other and that both cognitive and affective development of the students were positively affected by the study. It has also been determined that it contributes to their socialization. In his study on the effect of digital media on informal learning, Drotner (2009) states that children or adults are not only structured but also unstructured learning that spans a considerable time and place. According to the author, this informal learning medium has opened up an incredible and almost impossible to measure field in education, not to forget its negative aspects. Öztürk (2009) also states that neither formal nor informal education can be sufficient in today's conditions but that both should be employed together at the appropriate place and time. According to the author, today, formal and non-formal education institutions alone are not equipped to respond to rapid changes. It is also argued that informal learning will significantly contribute to society in countries where formal education cannot meet the needs of society or is unevenly distributed. There was a positive increase in the attitudes of the experimental group students towards the RCMK course. Considering this result, it may be considered more informal learning environments make students' attitudes more favorable for the RCMK course in particular and the other courses in general.

When the literature on informal learning environments is examined, it is seen that there are very few studies, mostly on science and natural sciences. However, as seen from this study, informal learning environments in social sciences can impact students' attitudes and academic achievements. Therefore, with more students at different grade levels, conducting new studies on different subjects in the Religious Culture and Moral Knowledge Course and with different informal learning environments will be beneficial.

Limitations

The fact that the study was conducted in a private school is one of the most important limitations. Repetition of the study to include public schools may remove this limitation. Another limitation is that the study was conducted with only one subject in the 4th and 5th grades. Therefore, the generalizability of the results is within the stated limitations.

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