ADAPTATION OF THE SCALE OF ATTENDANCE TO LESSONS IN THE PROCESS OF DISTANCE EDUCATION INTO TURKISH: WITHIN THE SCOPE OF PRIMARY EDUCATION MATHEMATICS TEACHING

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Abstract

In this study, it was aimed to adapt the Classroom Attendance Scale developed by Dixson (2015) into Turkish. Translation, back-translation, expert control and pilot application were carried out on the original scale, and after the Turkish editing was completed, it was applied to 232 students who took a part of the courses in primary school mathematics teaching remotely. CFA was applied to analyze the construct validity of the scale. Modifications suggested by LISREL were taken into account in order to improve the fit indices of the DFA result, and better fit was achieved at the end of the DFA performed in the second stage. The Cronbach α internal consistency coefficient value calculated to determine the reliability of the scale was found to be 0.94. When all items were examined in terms of discrimination, it was found that there was a significant difference between the upper and lower groups. Therefore, it can be said that the items are distinctive. The results obtained in the adaptation of the original scale to Turkish; shows that the Turkish version of the scale is valid and reliable.

Keywords: Scale adaptation, construct validity, reliability, item difficulty

1. Introduction

Technological developments in the current century have created radical changes in social and individual needs. Depending on these developments, it has been observed that many different sectors have entered the digital transformation process. This also includes education

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(Önür & Kozikoğlu, 2020). Especially with the pandemic, the reflection of digital transformation on education has become much faster and distance education has come to the agenda.

Keegan (1996) stated that distance education includes distance learning and distance teaching. Based on different definitions, he mentioned five basic features of distance education. These are; the physical distance between the teacher and the instructor, distance education is not only a type of personal study but also a systematic educational organization, the use of printed, audiovisual materials, technological tools to bring teachers and students together and share educational content, two-way communication between teachers and students, and simultaneous meetings when necessary for educational and social purposes. Allen and Seaman (2017) define distance education as an education in which students and teachers are located in different places from each other and they can do their lessons synchronously or asynchronously with the help of technology. The General Council of Higher Education (2020) stated that distance education should be based on mutual interaction in higher education institutions, where educational practices are planned and realized through technology, at the same time (or at different times) and without the obligation of instructors and students to be in the same location.

Although it is also used at certain levels under normal conditions, with the emergence of the pandemic in Turkey and in the world, the process of distance education has been rapidly switched to all levels of education. This situation finds its place in the literature as emergency distance education. Emergency distance education is expressed as using the distance education exit route in crisis situations or emergencies, and after the crisis situation is over, face-to-face education is returned (Hodges, Moore, Lockee, Trust, & Bond, 2020). The aim here is actually to prevent the disruption of educational situations that concern a significant part of the population (students, teachers, parents, etc.) and to keep education alive somehow (Bozkurt, 2020). As a matter of fact, after the pandemic in Turkey, with the earthquake that took place in April 2023 and affected many cities, courses in universities started to be conducted through distance education again.

However, providing an effective learning environment in distance education is a complex process that requires a good plan, a good goal setting and a good design (Bozkurt & Sharma, 2020). The foundation of successful distance education is built on instructional design, development and access, which are neither related to distance nor time (Simonson et al., 2015). When the studies are considered in a holistic manner, it is stated that well-designed online education can contribute to learners at least as much as face-to-face education, while it is emphasized that few online education programs are well designed (Lowes & Lin, 2018). This situation requires a process. However, it has not been possible to have such a process with emergency distance education, and according to the researches, it has brought along certain problems and has not been implemented in real terms (Bozkurt & Sharma, 2020;

Golden, 2020; Hodges et al., 2020; Shisley, 2020; Yıldız & Kartal, 2020). As a matter of fact, in this process, the roles of students and teachers have changed with distance education, and learning environments and teaching materials have been enriched with technology. All these changes and transformations show that distance education is an innovative form of education that supports face-to-face education and provides informal learning opportunities for individuals instead of being an alternative to traditional education (Pektekin, 2013). However, it has its own positive and negative aspects.

When the related researches are examined; the positive aspects of distance education can be listed as independence from time and space, individual learning opportunity, saving and providing equal opportunity (Dobbs, del Carmen, & Waid-Lindberg, 2017; Erşen & Yumak, 2021; Keegan, 1996; Moore & Kearsley, 2012). In terms of negative aspects, it is seen that in distance education, there are technical problems, problems arising from low technology literacy in the teaching process, classroom management difficulties, lack of immediate feedback to the student, time management and self-control, difficulty in finding a suitable learning environment, interaction and communication problems, low motivation, socialization problems, problems arising from prejudice against technology, and legal / ethical problems (Attri, 2012; Bilgiç & Tüzün, 2015; Erşen & Yumak, 2021; Gürer, 2021; Horspool & Lange, 2012; Kaya, 2002; Liang & Chen, 2012; Özcan & Saraç, 2020).

A similar situation has been observed in mathematics courses taught through distance education. There are studies on the use of computer programs in mathematics courses, computer-assisted mathematics education, and the comparison of face-to-face and online/blended mathematics education. Among these studies, there are studies conducted with teachers (Acar & Peker, 2022; Karaduman, Ertaş, & Baytar, 2021; Kilit & Güner, 2021; Özdemir Baki & Çelik, 2021, etc.), students (Erşen & Yumak, 2021; Korkmaz, 2021, etc.), instructors (Barış & Çankaya, 2016; İnan, 2013; Koloğlu, Kantar, & Doğan, 2016) and undergraduate students (Barış, 2015; Döş & Olcay, 2016; Özdemir Baki & Çelik, 2021, etc.). As a matter of fact, although it existed before the pandemic, studies conducted with pre-service teachers have increased (Yenilmez, Turgut, & Balbag, 2017; Genç & Gümrükçüoğlu, 2020; Karakuş et al. 2020; Karatepe, Küçükgençay, & Peker, 2020; Keskin & Derya, 2020; Pınar & Dönel-Akgül, 2020; Yolcu, 2020).

In the studies conducted with prospective mathematics teachers (Akıncı & Tunç, 2021; Erşen & Yumak, 2021; Gümüş, 2023; Kutluca, Yalman, 2013; Korkmaz 2021; Yığ, 2023), the opinions of prospective teachers about the distance education process were generally discussed. For example, Erşen and Yumak (2021) applied a questionnaire consisting of open-ended questions to determine the opinions of pre-service mathematics teachers about distance education practices during the distance education period and found that while pre-service teachers interpreted this process positively in terms of protection from the virus, re-watching the lessons, minimizing economic needs, they interpreted it negatively in terms of decreasing

motivation, technological problems and limiting communication. In another study, Yığ (2023) conducted a semi-structured interview with 33 pre-service teachers in his study designed as a case study. The pre-service teachers stated that they experienced technical problems, motivational-personal problems and problems related to the planning of the lesson more. They stated that they found more flexible lessons, access to videos and documents, and the use of mathematical technologies more positive.

In this section, the scientific basis of the research topic and the problem situation should be clearly explained, the related literature should be critically evaluated, the purpose of the research, the research questions and the importance of the research should be explained under the relevant headings.

It is clear that distance education is now a part of our lives and distance education can be applied especially in different emergency situations. In this context, the participation of pre-service teachers, who will be involved in this process and who are the main guides of this process, in distance education courses is a situation that needs to be investigated.

In this study, it is aimed to determine the participation in mathematics and mathematics education courses given in the distance education process in the department of elementary mathematics teaching and the students' perspectives on this issue. For this purpose, the scale originally designed by Dixson (2015) was applied to students who had taken these courses at a distance and were studying in elementary mathematics teaching department for mathematics and mathematics education courses.

2. Method

The aim of this study is to adapt the scale for evaluating student engagement in distance education into Turkish. In this context, students were introduced, the scale was translated into Turkish, confirmatory factor analysis with lisrel, reliability analysis (Cronbach α value) and item analysis (independent t test, correlation value) were conducted.   In this section, which is supported by scientific citations, the research model and the suitability of the adopted model for this research should be justified. According to the type of research, one of the titles such as "study population", "study group", "sample selection" and "research group" should be used. In addition, the data collection tools used in the research, the validity and reliability studies of the data collection tools, the measures taken for credibility and ethics, the practices carried out, the data collection process, the analysis of the data, the limitations of the research and the role of the researcher should be explained.

2.1.   Research Design

In this study, a quantitative research design was used in line with the research purpose.

2.2.   Population and Sample

The population of the study consists of the students who took courses through distance education in the department of elementary mathematics teaching during the pandemic period in Turkey. The sample of the study consists of students who took courses through distance education in the department of elementary mathematics teaching in 2 different universities in Anatolia during the pandemic period. Therefore, purposive sampling method was used. A total of 232 students participated in the study. The students studied or are studying at universities located in different provinces in Turkey. The demographic information of the students participating in the study is shown Table 1 below.

Table 1. Demographic data of the participants

Category Titles	Categories	N	%
Gender	Female	154	%66
	Male	78	%34
Student's class	3rd Class	136	%59
	4th grade	81	%35
	Graduate	15	%6
Age range	19	4	%2
	20	31	%14
	21	99	%44
	22	82	%35
	23	12	%6
	24	5	%2
	25	4	%2

Of the students participating in the study, 66% were women. The highest number of participants were 3rd graders (59%), while the lowest number of participants were graduates (6%). In terms of age, there were more participants aged 21 (44%) and 22 (35%), while there were very few participants aged 19 (2%), 25 (2%) and 24 (2%).

2.2.1. Data Collection Tools

In this study, the scale for evaluating participation in distance education designed by Dixson (2015) was used. Permission was obtained from the researcher to use Dixson (2015) scale and Turkish adaptation study was started after permission was obtained. The scale consists of 5-point Likert-type questions ranging from Strongly Disagree to Strongly Agree and measures four dimensions: skill, emotion, engagement, and performance.

In the process of designing the scale, Dixson (2015) first conducted a pilot study with 32 students for 30 items. In the first pilot study, the reliability was found to be very high (0.95). Then, the actual study was conducted and further analyses were conducted with a larger group of 186 students studying 38 courses. First, an exploratory factor analysis was conducted. At

the end of this analysis, scale items with a value of =.60 or higher were selected and the total number of scale items was reduced to 19. In addition, as a result of this analysis, it was seen that the scale consisted of 4 dimensions. These dimensions include skill, emotion, participation and performance. In the main study, the reliability result of the scale was 0.91. In addition, the overall correlation of the items was significant (r = .67; p < .001).

2.3. Data Collection Process

The questionnaire was applied on paper to the students who were still studying and transferred to the online environment by 2 researchers. It was applied online to the graduated students.

2.4. Data Analysis

In the study, firstly, the scale was translated separately by 3 different instructors working in English language education, then these three translations were analyzed by 2 researchers and a common scale was created. Then, the translated scale and the English version of the scale were sent to two mathematics educator experts who have a good command of English and the comprehensibility and coherence of the sentences were evaluated. The scale was revised in line with the suggestions obtained and the final version was sent to the mathematics expert and checked again. This process was continued until there was no need for revision. Then, the obtained scale was first applied to 30 individuals who had taken the courses taught in the department of elementary mathematics teaching at the university remotely, and the opinions of the prospective teachers about the scale were taken and the scale was revised again on the condition of remaining faithful to the original.

In the main study, the final version of the scale was administered to 232 individuals and then the analysis process was started. First of all, Confirmatory Factor Analysis was conducted in Lisrel 8.80 to evaluate the construct validity of the items. In this way, the compatibility of the collected data with the previous structure of the scale was examined. In addition, CFA was applied to reveal the relationships between the observed or latent dimensions. After this process, Cronbach α reliability analysis was conducted to evaluate the reliability of the scale. At the last stage, in order to evaluate the discriminative properties of the items within the scope of item analysis, an independent t-test was applied using SPSS software to evaluate the significance of the difference between the 27% of the sample with the highest score and the 27% with the lowest score. In addition, the correlation of each item with the whole scale was evaluated and the total correlation of the items was found.

3.   Results

In this section, construct validity findings, reliability analysis and item difficulty findings regarding the data obtained from the scale are presented.

3.1.   Construct Validity Findings

As a result of the applied scale, 232 people were reached and CFA was applied to analyze the construct validity of the scale. According to the data obtained, the χ2 /sd result was 4.78 and the RMSEA value was 0.127. Especially since the RMSEA value was much higher than the average, modification was made in line with the recommendation of Lisrel software. The diagram obtained as a result of the modification is shown in Figure 1. Statistics and data analysis.
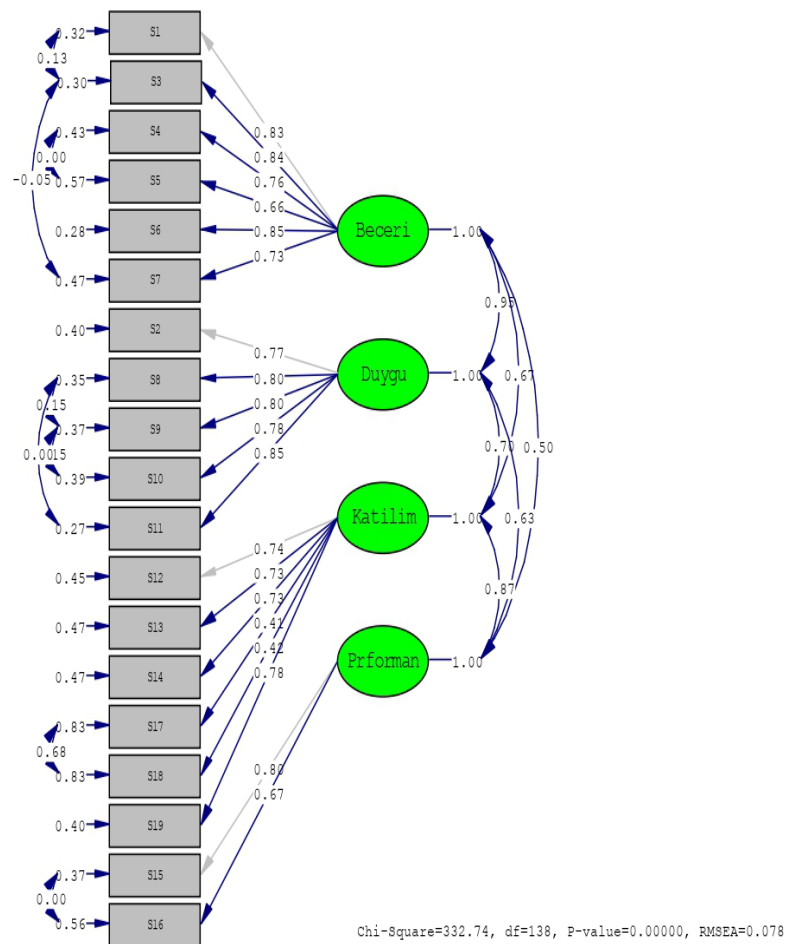

Figure 1. Structural equation modeling path diagram of the scale

At the end of the modification, it is recommended that the Chi-square/sd value should be less than five with 2.41 (Raykov, 1998; De Carvalho & Chima, 2014) and this value was reached. The RMSEA value is expected to be less than 0.08 (Kline, 2015). As a result of the analysis, it was observed that RMSEA was 0.078. In addition to these values, SRMR=0.071, GFI=0.88, CFI=0.98, NFI=0.96, NNFI=0.97, PNFI=0.77, IFI=0.98, RMR=0.10. Critical N value (CN)= 127.27, which gives an idea about the minimum sample size in Lisrel CFA. The sample size of this study is 232 people. In this respect, it can be said that it exceeds the minimum sample size.

Table 2. Fit indices obtained as a result of CFA in the literature

	Acceptable Fit	Good Fit	Value Achieved
*χ^2 /sd	2 < χ^2/sd ≤5	0 ≤ χ^2/sd ≤ 2	2.41
**RMSEA	0.05 < RMSEA ≤ 0.08	0 ≤ RMSEA ≤ 0.05	0.078
***SRMR	0.05 < SRMR ≤ 0.10	0 ≤ SRMR ≤ 0.05	0.071
****GFI	0.90 ≤ GFI < 0.95	0.95 ≤ GFI ≤ 1.00	0.88
****NFI	0.90 ≤ NFI <0.95	0.95 ≤ NFI ≤ 1.00	0.97
***NNFI	0.95 ≤ NNFI < 0.97	0.97 ≤ NNFI ≤ 1.00	0.97
****CFI	0.95 ≤ CFI < 0.97	0.97 ≤ CFI ≤ 1.00	0.98
**PNFI	0.50 ≤ PNFI ≤ 0.95	0.95 ≤ PNFI ≤ 1.00	0.77

*(Wheaton, Muthén, Alwin ve Summers, 1977);**(Brown ve Cudeck, 1993);***(Schermelleh-Engel ve Moosbrugger, 2003); ****(Bentler ve Bonett, 1980; Marsh, Hau, Artelt, Baumertv ve Peschar, 2006)

When Table 2 is examined, it can be said that NFI, NNFI and CFI values obtained good fit. However, χ^2 /sd, RMSEA, SRMR and PNFI values are at acceptable fit level. However, although the GFI value is lower than expected, it is actually quite close to the acceptable level. In Table 3, t value and factor loadings are analyzed.

Table 3. t-values and factor loadings of the items after the analysis

Question number	T value	Factor Load
S1	14.95	0.83
S3	15.29	0.84
S4	12.99	0.75
S5	10.47	0.64
S6	15.78	0.85
S7	12.40	0.73
S2	13.26	0.75
S8	15.78	0.85
S9	16.47	0.87
S10	15.08	0.82
S11	15.27	0.83
S12	12.44	0.74
S13	12.22	0.73
S14	12.26	0.73
S17	6.11	0.41
S18	6.22	0.42
S19	13.42	0.78
S15	12.70	0.81
S16	10.19	0.66

T value is related to the compatibility of the items with each other. When Table 3 is examined, it is observed that the t value of all items is above 2.56. Thus, it can be said that all items are compatible with each other at the 0.01 level (Seçer, 2015).

Factor loading value is related to the size and correlation of each item (Yılmaz & Çelik, 2020). When the table is examined, the items related to skill (S1, S3, S4, S5, S6 and S7) have factor loadings between 0.73 and 0.85, and the items related to emotion (S2, 28, S9, S10 and S11) have factor loadings between 0.75 and 0.87. When the items related to participation (S12, S13, S14, S17, S18 and S19) are examined in the table, it is seen that they are between 0.41 and 0.78. When the items related to performance (S15, S16) are analyzed, two items are between 10.19 and 12.70. Since the factor loading should be at least 0.30, it can be said that each item has a correlation with its dimension (Seçer, 2015).

3.2.   Reliability Analysis

Cronbach's α reliability analysis was conducted to determine the reliability of the scale. As a result of the analysis, α= 0.94 was obtained. In addition, α reliability analysis was calculated to determine the reliability of each sub-dimension of the scale. The reliability of the skill sub-dimension was α= 0.90, the reliability of the emotion sub-dimension was α= 0.911, the reliability of the participation sub-dimension was α= 0.861 and the reliability of the performance sub-dimension was α= 0.918. An alpha value of 0.70 and above is sufficient for the reliability of a measurement tool (Büyüköztürk, 2011). In this respect, it can be said that the reliability of the scale itself and its sub-dimensions is high.

3.3.   Item Difficulty Analysis

The total levels of the opinion scale on distance education were obtained by summing the scores of the items. The people in the highest scoring 27% and the people in the lowest scoring 27% were assigned as the highest and lowest groups. Then, an Independent t Test was conducted between these two groups to examine whether there was a significant difference between the items (Can, 2019). At the end of this examination, it is expected that the upper group students will have higher scores than the lower group students and there will be a significant difference between them.

Table 4. Evaluation of the discriminative properties of the items

Question number	Group	X	T	P	Direction of Item Total Correlation
M1	Top Group	3.84	17.504	0.00	0.870
	Subgroup	1.43			
M2	Top Group	3.84	14.745	0.00	0.839
	Subgroup	1.59			
M3	Top Group	3.89	12.772	0.00	0.761
	Subgroup	1.85			
M4	Top Group	4.14	11.431	0.00	0.710
	Subgroup	2.28			
M5	Top Group	3.82	15.975	0.00	0.838
	Subgroup	1.49			
M6	Top Group	4.34	14.570	0.00	0.818
	Subgroup	2.15			
M7	Top Group	3.95	14.613	0.00	0.816
	Subgroup	1.76			
M8	Top Group	3.67	18.018	0.00	0.868
	Subgroup	1.32			
M9	Top Group	3.60	15.727	0.00	0.837
	Subgroup	1.34			
M10	Top Group	3.62	15.332	0.00	0.828
	Subgroup	1.40			
M11	Top Group	3.93	18.773	0.00	0.891
	Subgroup	1,43			
M12	Top Group	3.76	11.750	0.00	0.753
	Subgroup	1.65			
M13	Top Group	3.46	11.266	0.00	0.736
	Subgroup	1.57			
M14	Top Group	3.75	12.268	0.00	0.734
	Subgroup	1.76			
M15	Top Group	4.39	8.270	0.00	0.588
	Subgroup	2.68			
M16	Top Group	4.18	8.605	0.00	0.575
	Subgroup	2.41			
M17	Top Group	3.57	9.427	0.00	0.660
	Subgroup	1.75			
M18	Top Group	2.87	8.869	0.00	0.637
	Subgroup	1.35			
M19	Top Group	3.50	7.887	0.00	0.539
	Subgroup	1.96			

As seen in Table 4, when all items were analyzed in terms of discrimination, a significant difference was found between the upper and lower groups. Therefore, it is seen that the items are discriminative.

The correlation value of the scores of each item with the whole scale should be at least 0.30 and positive (Büyüköztürk, 2011). When Table 4 is examined, it is observed that the correlation value is between 0.891 and 0.575. It is seen that all of the items are in positive direction and 14 items have high correlation and 5 items have medium correlation.

4. Discussion and Conclusion

This study involves the adaptation of the evaluation scale of participation in distance education into Turkish. In this context, validity and reliability studies were conducted. First of all, the translation procedures related to the original scale were carried out, expert opinions were taken and a pilot study was conducted. First of all, CFA was applied to analyze the construct validity of the scale. The modifications suggested by LISREL were taken into consideration to improve the fit indices as a result of CFA, and a better fit was achieved at the end of the CFA performed in the second stage.

The Cronbach α internal consistency coefficient value calculated to determine the reliability of the scale was found to be 0.94. The reliability of the skill sub-dimension was $\alpha= 0.90$, the reliability of the emotion sub-dimension was $\alpha= 0.911$, the reliability of the participation sub-dimension was $\alpha= 0.861$ and the reliability of the performance sub-dimension was $\alpha= 0.918$. An alpha value of 0.70 and above is sufficient for the reliability of a measurement tool (Büyüköztürk, 2011; Taşpınar, 2017).

When all items were analyzed in terms of discrimination, it was found that there was a significant difference between the upper and lower groups. Therefore, it can be said that the items are discriminative.

The results obtained in the adaptation of the original scale into Turkish show that the Turkish form of the scale is valid and reliable. In this context, it was concluded that the Turkish version of this scale can be used. The adapted version of the Turkish version of the class participation scale is presented in the appendix.

5. Compliance with Ethical Standards
5.1. Conflict of Interest: The authors declare that they have no conflict of interest.

5.2. Ethical approval: "All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or

national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards."

5.3.   Informed consent: "Informed consent was obtained from all individual participants included in the study."

5.4.   Data Availability Statement: "The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request."

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Appendix: Scale of Student Participation in Online Courses

Sayın katılımcı,

Bu araştırma, siz öğretmen adaylarının çevrimiçi matematik eğitimi ya da matematik derslerine katılma derecenizi ölçmeyi hedeflemektedir. Bu araştırma ile sizleri daha iyi tanımak ve sizlere daha fazla yardımcı olmak hedeflenmektedir.

Araştırmada sizden hiçbir kimlik bilgisi istenmemektedir. Araştırma ile elde edilecek sonuçlar kişiler deşifre edilmeden genel bir çerçevede değerlendirilecektir.

Anket iki bölümden oluşmaktadır. Lütfen size en uygun olduğunu düşündüğünüz seçeneği işaretleyiniz. Eğer diğer seçeneğini kullanacaksanız boşluğa istenen bilgiyi lütfen belirtiniz. sağlıklı sonuçlar vermesi için ankette verilen bütün sorulara lütfen içtenlikle cevap verilmesi gerektiği unutmayınız.

Araştırmanın Araştırmaya ayıracağınız zaman için şimdiden çok teşekkür ederiz.

Sayın katılımcı Çevrimiçi eğitim sürecinde aldığınız Alan derslerinden (Matematik Dersleri) ya da Alan Eğitimi derslerinden (Matematik Eğitimi Dersleri) birini düşününüz. Lütfen anketi o dersi göz önünde bulundurarak doldurunuz.

O dersin adı ne? _____

Yaş:

Cinsiyet: Kadın Erkek Diğer

Sınıf seviyesi: 1. Sınıf 2. Sınıf 3. Sınıf 4. Sınıf

Ders: Alan Dersi   Alan Eğitimi Dersi

Çevrimiçi öğrenme deneyiminde bulunduğunuz derslerle ilgili aşağıda verilen maddelerde sizin davranışlarınızı, düşüncelerinizi ve duygularınızı en iyi tanımlayan seçeneği işaretleyiniz. Yanıtlarınız bilimsel amaçlarla kullanılacağından lütfen sizi yansıtacak şekilde seçiminizi yapınız. İlk 19 soruyu lütfen aşağıdaki ölçeği kullanarak cevaplayınız:

1. Kesinlikle katılmıyorum

2. Katılmıyorum

3. Kararsızım

4. Katılıyorum

5. Kesinlikle katılıyorum

1. Çevrimiçi derslere katılmak düzenli çalışmamı sağladı: 1 2 3 4 5
2. Çevrimiçi derslere katılmak çaba göstermemi sağladı: 1 2 3 4 5
3. Çevrimiçi derslere katılmak yazıları (slaytları) takip etmemi sağladı: 1 2 3 4 5
4. Konuları anladığımdan emin olmak için çevrimiçi ortamdaki ders notlarına bakabildim: 1 2 3 4 5
5. Çevrimiçi derslere katılmak düzenli olmamı sağladı: 1 2 3 4 5

6. Çevrimiçi derslere katılmak yazılar, powerpointler veya video dersler üzerine iyi notlar alabilmemi sağladı: 1 2 3 4 5
7. Çevrimiçi derste dikkatlice dinleme/okuma yapabildim: 1 2 3 4 5
8. Çevrimiçi derslere katılmak ders konularını hayatımla ilişkili hale getirmenin yollarını bulmamı sağladı: 1 2 3 4 5
9. Çevrimiçi derslere katılmak ders konularını hayatıma uygulayabilmemi sağladı: 1 2 3 4 5
10. Dersi benim için ilginç kılmanın yollarını buldum: 1 2 3 4 5
11. Çevrimiçi derslere katılmak konuları gerçekten öğrenmeyi istememi sağladı: 1 2 3 4 5
12. Eğitmen veya diğer öğrencilerle dersle ilgili çevrimiçi sohbetler, tartışmalar veya e-posta yoluyla iletişim kurmak eğlenceli geldi: 1 2 3 4 5
13. Dersle ilgili küçük grup tartışma forumlarına aktif olarak katıldım: 1 2 3 4 5
14. Çevrimiçi derslere katılmak diğer öğrencilere yardım etmemi sağladı: 1 2 3 4 5
15. Çevrimiçi dersten iyi bir not aldım: 1 2 3 4 5
16. Testlerde/quizlerde başarılı oldum: 1 2 3 4 5
17. Çevrimiçi dersle ilgili sohbetlere katıldım (sohbet, tartışmalar, e-posta): 1 2 3 4 5
18. Çevrimiçi derslerde tartışma forumunda düzenli olarak paylaşım yaptım: 1 2 3 4 5
19. Çevrimiçi dersteki diğer öğrencileri tanıyabildim. : 1 2 3 4 5
20. Çevrim içi ders ile ne kadar ilgilisiniz?
    Hiç ilgili değilim - - - - - Son derece ilgiliyim
21. Aldığınız diğer derslere (çevrimiçi veya geleneksel) kıyasla bu derse ne kadar ilgilisiniz?
    Hiç ilgili değilim - - - - - Son derece ilgiliyim
22. Çevrimiçi derslerde yer alan ödev, etkinlik gibi görevler diğer arkadaşlarınızla iletişime girmeniz açısından sizi nasıl etkiledi / teşvik etti / mecbur bıraktı (bir veya iki tanesini liste şeklinde yazınız)?
    _____
     _____
23. Bu dersteki diğer öğrencileri ne kadar tanıdığınızı düşünüyorsunuz?
    Hiç değil - - - - - Son derece iyi
24. Çevrimiçi derste yer alan ödev, etkinlik gibi görevler dersin içeriği hakkında gerçekten düşünmenize ve ilgilenmenize yardımcı oldu mu?/ teşvik etti mi?/ gerektirdi mi? (bir veya iki tanesini liste şeklinde yazınız)?
    _____
     _____
25. Eğitmeninizi ne kadar iyi tanıdığınızı düşünüyorsunuz?
    Hiç iyi değil - - - - - oldukça iyi