Avrupa Bilim ve Teknoloji Dergisi
Sayı 35, S. 235-242, Nisan 2022

Araştırma Makalesi

www.ejosat.com ISSN:2148-2683

European Journal of Science and Technology
No. 35, pp. 235-242, April 2022

Research Article

Classroom Attendance Scale Development and Validation Study

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(First received 26 January 2022 and in final form 22 March 2022)

(**DOI:** 10.31590/ejosat.1063599)

ATIF/REFERENCE: Akkuş, A. (2022). Classroom Attendance Scale Development and Validation Study. *European Journal of Science and Technology*, (35), 235-242.

Abstract

Classroom Attendance Scale (CAS) was prepared with 14 items. Prepared CAS consisted of items with likert type. Sample of the study for the exploratory factor analysis consisted of 318 college students who were studying at education faculty at science education and primary education programs along with students studying at engineering faculty. Principal axis factoring with orthogonal rotation (varimax) was used for exploratory factor analysis. Factor eigenvalues were obtained and corrected-item total correlations analyzed. Items which did not serve the purpose of scale were omitted from CAS. Thus, analyses with same procedure were reconducted several times until reaching to a final version of the CAS. Obtained factors were crosschecked with Monte Carlo Parallel Analysis Simulations. A confirmatory factor analysis with Maximum Likelihood was applied to a different sample (N=229) and CAS is approved by most common fit indices values. Total sample of the study consists of 547 participants. Finalized CAS consisted of 8 items and scale's Cronbach's alpha value was .923.

Keywords: Attendance, Classroom attendance, Classroom attitude, Scale development.

Derse Devam Ölçeği Geliştirme ve Geçerlik Çalışması

Öz

Derse Devam Ölçeği (DDÖ) 14 maddeden oluşturulmuştur. DDÖ için oluşturulan maddeler likert tipli maddelerdir. Araştırmanın açımlayıcı faktör analizi için örneklemini eğitim fakültesi fen bilgisi öğretmenliği ve sınıf öğretmenliği bölümlerinde ve mühendislik fakültesinde öğrenim görmekte olan toplamda 318 üniversite öğrencisi oluşturmaktadır. Açımlayıcı faktör analizi için principal axis factoring, orthogonal döndürme (varimax) ile birlikte kullanılmıştır. Faktör özdeğerleri ve düzeltilmiş-madde ölçek korelasyonları incelenmiştir. Ölçeğin amacına hizmet etmeyen maddeler DDÖ'den çıkarılmıştır. Bu nedenle DDÖ'nün nihai hali oluşuncaya dek aynı analizler tekrarlanmıştır. Elde edilen faktörler Monte Carlo Paralel Analiz Simülasyonları kullanılarak kontrol edilmiştir. Farklı bir örneklem ile (N=229) Maximum Benzerlik kulllanılarak doğrulayıcı faktör analizi yapılmış ve DDÖ bir çok yaygın fit indis değerlerince onaylanmıştır. Çalışmanın toplam örneklemini 547 kişi oluşturmaktadır. Nihai DDÖ 8 maddeden oluşmakta ve .923 Cronbach's alpha iç güvenirlik değerine sahiptir.

Anahtar Kelimeler: Devam, Derse devam, Ders tutumu, Ölçek geliştirme.

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1. Introduction

A good learning environment might be defined with several variables. One of the variables is the qualified teachers using different instructional methods (Amoo & Swart, 2018). Other variable might be suggested as course materials which are enriched by means of technology such as available online materials (slides, videos, voice recordings, lecturers' notes and online assignment works) to enhance and enrich learning. On the other hand, a good learning environment was also defined by outcomes of it i.e. learning and retention of knowledge. Taking a glance upon the retention of knowledge, it was revealed that students with high classroom attendance rates do significantly better on retention tests than rest of the students. Thus, classroom attendance is part of good learning environment (Hemyari, Zomorodian, Sahraian, Mardani, Sarkari & Ahmadi, 2017).

Most of the studies done on the relationship between classroom attendance and exam grades have found a positive relationship between them (Chen & Lin, 2008). Although many studies point out such results, few studies focus on the reason, and rest of the studies just make inferences on the case or why such results occur. When reasons for absentees are examined, one might mention that it depends on course days or even course hours while others may claim opposite (Gump, 2005). Even, there is an argument on classroom size as one of the factors affecting the attendance (Devadoss & Foltz, 1996). In addition to those arguments on classroom sizes, few researchers state that students attend assistants' lectures more often than professors' (Friedman, Rodriguez & McComb, 2001). Along with reasons stated above, factors affecting students' success might be listed as perceived stress, academic satisfaction and hours spent on studying. Be that as it may, classroom attendance is to have most significant observable effect on academic success. Low attendance rate might have long term effect on individuals' life such as, unemployment, discontinuing education, not being well adjusted to social and state norms (Jha, Kumar, Kumar & Singh, 2017).

1.1. Classroom Attendance and Motivation

There are some proximate variables within the success. In fact, attendance is part of a large equation (Gump, 2005). Researches have already illustrated that attendance is affected by motivation. For that reason, increasing the motivation or enhancing the beliefs on benefits of classroom attendance will eventually drive the behavior to attend the class. Then, perhaps focus on other instruments such as instruction techniques, course materials, projects, course programs etc. will provide much better learning environments. Thus, explaining the participation and decisions leading to participate lie in the focus (Ajzen, 2005b; Pryor, 1990).

Instructors may not pay much attention on their students' attendance. Perhaps the reason is to give students the autonomy of their choice on their behavior. However, researches have already shown that classroom attendance is strongly related to classroom performance and thus to better grades, so to comprehension of the materials covered in the courses. Classroom attendance and motivation have bidirectional relationship. High student motivation brings classroom attendance whose positive relationship with grades is already shown with various studies. Even the traditional instruction methods help students to comprehend the course material when attendance is compulsory (Crede, Roch & Kieszczynka, 2010). To that end, importance of classroom attendance has not changed with respect to its relationship with grades (Crede et al., 2010). On the other hand, it must be noted that attending classes must be worthy of students' time. There is no point in following an instructor who follows up the textbook closely if they already have the course materials. Classrooms should provide insights of the material which is given in the textbook if not, then students will not have enough motivation for attendance. Absences in the classroom may create unpleasant surrounding for instructors and students. It also harms dynamic learning environment. It is noteworthy to point out that instructors who are seen successful in teaching, attract more students to classrooms (Devadoss & Foltz, 1996). Consequently, students' aptitude towards courses might also be included as one of the factors affecting the attendance. Academic performance has a positive relationship with classroom attendance and, classroom attendance is affected by motivation (Devadoss & Foltz, 1996).

In addition to the factors stated previously, which affect classroom attendance, there are other factors which might be listed as disliking the instructor, finding the classroom boring, or not useful, or having disliked members in the classroom. Be that as it may, one must note that finding out the reasons why students have absenteeism is important as much as why students attend classrooms. Studies show that inner motivation factors are effective on classroom attendance and not many researches are done on inner factors. As a consequence, self regulatory behaviors are among the concerns within classroom attendance. Yet, researches on self regulatory behaviors have not been done enough in numbers (Van Blerkom, 1992).

1.2. Self Regulatory Behaviors and Attitudes

Behaviors are related with attitudes and attitudes are affected by feelings (Ajzen, 2005a). Choosing the pleasurable activities instead of going to class is one of the main reasons for absenteeism. Disliking the course or instructor (in some cases both) is another reason. A similar reason is getting socialized or using opportunity to socialize instead of going to class. Understanding the values of students will also enable researchers/instructors to determine students' priority values which might be used in developing positive attitudes and long term motivational objects (Demirutku & Tekinay, 2016).

Attitudes have reasonable effect on behaviors so, they might be used to predict them. Theory of reasoned action might be used for predicting and explaining the determinants of volitional behaviors. Comprehensive approach of theory toward behaviors has already its success in many researches (Trafimow, 2009). Theory of planned behavior, a descendant of theory of reasoned action, introduced perceived behavioral control in order to explain the observed behavior. In fact, first study was related to students' classroom attendance. Although both theories have their strengths and weaknesses, they are still useful to predict the behaviors and, both theories include attitude as a component of the behavior. Theory of planned behavior indicates attitudes are effective on behaviors. Thus, a student doing homework might have positive attitude toward classroom and exhibit the behavior of attending the classroom. For that reason, it could be used to identify factors effective on behavior and used for changing behavior (Teo & Lee, 2010; Ajzen, 2005a).

For that reason, these models could be used to produce strategies to change the behavior. However, to do that one must know what to change, in other words how and how much attitude should be changed (Madden, Ellen & Ajzen, 1992). Thus, knowing students' attitude towards class attendance is important (Devadoss & Foltz, 1996).

1.3. Importance of Study

Questionnaires might be used to collect data in order to understand one's perception (Deshpande, 2004; Francis et. al., 2004; Hinkin, 1998; Wong & Lian, 2003) so that, effective measures might be taken into account for the purpose (Hinkin, 1998; Hinkin, Tracey, Enz, 1997). However, number of scale development studies to measure students' attitudes toward classroom attendance is limited. Literature review on Google Scholar returns with zero results for "classroom attendance scale". Although the search with term "class attendance scale" return with few results, taking a glance upon the results reveal that those results direct to "classroom engagement scales". In addition, each scale has a different theoretical aspect since it is constructed in its studied culture, thus a mere translation of existing scales may not be valid for local purposes (Francis et. al., 2004). Thus, purpose of this study is to create a classroom attendance scale (CAS) in order to fill the gap in the literature.

2. Material and Method

2.1. Research Design

Methodological research design was used for developing the classroom attendance scale due to its useful design in sustaining data quality and appropriateness in survey development or scale adaptation studies (Madans, 2001).

2.2. Preparation of Draft Scale

To achieve the purpose of the study, researches on classroom attendance were reviewed. Suggestions from literature were taken into account to elicit the required domain (Ajzen, 2005a; Ajzen, 2005b; Ajzen, 2005c; Amoo & Swart, 2018; Brinkman, 2009; Cabrera-Nguyen, 2010; Chen & Lin, 2008; Cohn & Johnson, 2006; Crede et al., 2010; Demirutku & Tekinay, 2016; Deshpande, 2004; Devadoss & Foltz, 1996; Durden & Ellis, 1995; Fjortoft, 2005; Francis et. al., 2004; Friedman et al., 2001; Gump, 2005; Hemyari et. al., 2017; Hilal Bati et al., 2013; Hinkin, 1998; Hinkin et. al., 1997; Hof, 2012; Jha et. al., 2017; Johanson & Brooks, 2010; Pryor, 1990; Van Blerkom, 1992), and some guide lines were determined. Those guidelines were;

a) In order to avoid bias items should be constructed with respect to the applied samples' schemes

b) Respondents should position themselves while answering

c) Only a single behavior or response must be addressed in items

d) In order to avoid different interpretations vague items must not be used

e) Items should not lead the responses

f) Target group must be familiar with language and information provided in items

g) Items should not contain double negative and/or sensitive sentences

h) Control items should not awake the respondents' previous answers (i.e interval between item and control item should be appropriate)

i) Scale items should reach/construct the related domain

Thurstone's method of equal-appearing intervals, likert scale, semantic differential scales were analyzed and it was decided that a likert type scale would provide more easy compilation and generalization for the purpose of the study (Brinkman, 2009; Hof, 2012; Johanson & Brooks, 2010; Lovelace & Brickman, 2013). To ensure the content quality, number of items were decided with respect to the attention time. In order to ensure sufficient variances and internal consistency, items' response was coded with respect to 5 level response style (Ajzen, 2005b; Brinkman, 2009; Francis et. al., 2004; Hinkin et al., 1997; Hinkin, 1998; Lovelace & Brickman, 2013). For triggering the vigilance of respondents reversed coded sentences were appropriately used so that respondents wouldn't choose options at the edges or in the same direction (Francis et. al., 2004; Hinkin, 1998; Hof, 2012)

CAS was developed to measure a general class attendance attitude thus had a generalized intention to measure the motivation. For that purpose, items questioning the reasons for absenteeism were not included in the draft CAS. For that reason, items such as "I was ill", "Someone needed my help", "I had a transportation problem" or "I fell asleep" etc were not included in the CAS since, those items regarded by the researcher as not motivational factors but humane or unavoidable reasons. Consequently, similar statements could violate the integrity of CAS and hence they were not included in the scale.

2.3. Classroom Attendance Scale (CAS)

Prepared draft scale was analyzed by two scholars who have the experience of teaching and has researches on the related issues since specialist could value the prepared scale on content domain (Hinkin et al., 1997). After determining the items, their numbers and scale's content, a pilot study was done with five students. Since the feedback from the students did not reveal any problem then, the scale was finalized. Created classroom attendance scale (CAS) consisted of 14 items. Created CAS consisted of four reversed questions (items) which were CAS3, CAS9, CAS10 and CAS12.

2.4. Sampling Method

In order to gather data easily, participants were selected through the instructors who agreed to distribute the questionnaire (CAS) to their students who were taking lectures from those lecturers. Thus, sampling method of the study was convenience sampling.

2.5. Sample

CAS was applied to 318 college students who were studying at education faculty at science education and primary education programs along with students studying at engineering faculty. Literature suggests 1:2 to 1:10 for item and sampling ratio for scale development purposes (Anthoine et al., 2014; Cabrera-Nguyen, 2010; Hinkin, 1998; Hinkin et al., 1997). Since item-respondent proportion exceeded 1:10 ratio, it was considered that sample size was good enough to develop CAS.

3. Results and Discussion

3.1. Reliability Analysis

Initial analysis of the data was done with respect to internal consistency and Cronbach's α was found as .736 which is "acceptable". Corrected item-total correlation values of the items were analyzed and items which were below the desired value of .2 (Johnson & Morgan, 2016) were omitted from the scale. As a consequent, CAS2, CAS3, CAS9, CAS10, CAS12 and CAS14 were immediately excluded from the scale. New Cronbach's α was found as .923 "excellent" (Kalaycı, 2010) for the final version of CAS.

3.2. Exploratory Factor Analyses

Principal axis was conducted on the 8 items with orthogonal rotation (varimax) through SPSS program to reveal the factors within the created scale since it was suggested for more reliable scale evaluation (Field, 2009; Hof, 2012). The Kaiser-Meyer-Olkin measure verified the sampling adequacy for the analysis, KMO=.916 ("marvelous" according to Kalaycı, 2010) which was above the acceptable limit of .5 (Field, 2013) and Bartlett's test of sphericity was found significant ($X^2(28)$ = 1934.966, p= .00 < .05). Since KMO value already signaled that sample size might be enough for the purpose, then analysis of each CAS item was initiated.

An initial analysis was run to obtain eigenvalues for each factor in the data. One factor emerged having an eigenvalue of 4.933 over Kaiser's criterion of 1 and explained % 61,660 of the variance. The scree plot (Figure 1) is obtained and it was decided that scale has one factor with respect to convergence of scree plot and Kaiser's criterion on this value. Table 1 shows the factor loadings and extracted communalities after rotation.

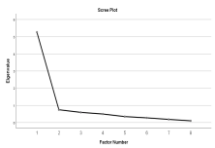

Figure 1. Scree Plot

Table 1. Extracted communalities and factor loadings

Items	h^2	Factor loading
CAS1	.483	.695
CAS4	.768	.876
CAS5	.819	.905
CAS6	.847	.920
CAS7	.716	.846
CAS8	.669	.818
CAS11	.297	.545
CAS13	.334	.578

For further analysis reliability of the factor was calculated as suggested (Field, 2013; Francis et. al., 2004) and CAS's Cronbach's α=.923 found as "excellent" (Kalaycı, 2010). For detailed analysis an independent t samples test was run for every item in the CAS to compare the up and down %27 of the sample since it was advised a good way of interpreting the scale items' discrimination power (Moore & Foy, 1997). Item-total correlation and $t_{\text{up-down (\%27)}}$ results and items' new codings are shown in Table 2.

Table 2. Item-total correlation and tup-down (%27) results

Old item coding	New item coding	Mean	Standard Deviation	Corrected-item total correlation	$t_{\text{up-down (\%27)}}$
CAS1	CAS1	3.33	1.601	.673	19.085*
CAS4	CAS2	3.38	1.554	.835	29.316*
CAS5	CAS3	3.44	1.546	.860	35.120*
CAS6	CAS4	3.47	1.558	.873	40.730*
CAS7	CAS5	3.33	1.509	.809	27.869*
CAS8	CAS6	3.29	1.512	.783	25.782*
CAS11	CAS7	3.28	1.338	.532	13.255*
CAS13	CAS8	3.25	1.382	.564	12.881*

* p < .05

The finalized CAS consists of 8 items and it is given in Appendix A. For international readers an English translation of CAS was done by the researcher and translation was approved by the professionals who have the adequate proficiency in English. Thus, an English version of CAS is also provided in the Appendix B. A discussion was provided in Discussion section. Not to confuse readers discussion is based on old item codings.

3.3. Confirmatory Factor Analyses

For confirmatory factor analysis (CFA) data were collected from a different sample. The sample consisted of university students who were studying at early childhood education, elementary mathematics teaching, and religious culture and moral teaching departments. The number of sample was 229 in total. Confirmatory factor analyses run through Amos 24.0 software. Initial analysis results revealed that χ2/DF ratio is 2,114 RMSEA value is .070; GFI value is .954; CFI value is .959; SRMR value is .0509; NFI value is .927; AGFI value is .918; IFI value is 0.960; PNFI value is 0.662; NNFI (TLI) value is 0.943. The confirmatory factor analysis result is shown in Figure 2. The confirmatory factor analysis fit indice values and their acceptable values are shown in Table 3.

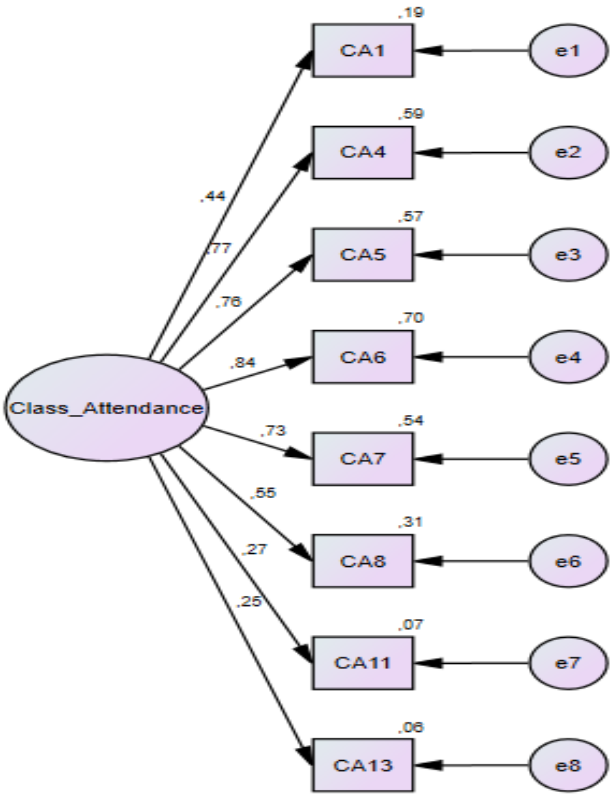

Figure 2. Confirmatory Factor Analysis Result

Table 3. CFA Fit indice Values and acceptable values

Indice Name	CFA indice	Acceptable indice value in literature	Literature
Chi Square	2,114	<3	Yıldırım & Selvi, 2015
GFI	.954	.90	Hooper, Coughlan, & Mullen, 2008
AGFI	.918	.90	Hooper, Coughlan, & Mullen, 2008
IFI	.960	.95	Baumgartner & Homburg, 1996; Bentler, 1980
RMSEA	.070	≤ 0.1	Browne and Cudeck, 1993; Carlback & Wong, 2018; Shadfar & Malekmohammadi, 2013
SRMR	.0509	< .08	Hooper, Coughlan, & Mullen, 2008
IFI	.960	.95	Hooper, Coughlan, & Mullen, 2008
CFI	.959	.95	Hooper, Coughlan, & Mullen, 2008

CFA fit indice of CAS was; $\chi 2/DF$ ratio was 2,114 and it was regarded that the model had a good fit since Chi-square ($\chi 2$) / degree of freedom (df) ratio was < 3 (Yıldırım & Selvi, 2015). GFI value was.954 and AGFI value was.918 and both values were greater than .90 thus model has good fit (Hooper, Coughlan, & Mullen, 2008; Sümer, 2000). IFI value was.960 and greater than .95 (Baumgartner & Homburg, 1996; Bentler, 1980), RMSEA value was.070 and model has a good fit since RMSEA ≤ 0.1 (Browne & Cudeck, 1993; Carlback & Wong, 2018; Shadfar & Malekmohammadi, 2013). SRMR value was.0509 and since it was < .08, model–data fit was acceptable. IFI value was .960 and CFI value was .959 and it was accepted that model has a good fit since CFI and IFI ≥ .95 (Hooper, Coughlan, & Mullen, 2008; Hu & Bentler, 1999).

4. Discussion

Standardized academic achievement tests may show that students with varying attendance rate have similar scores. Thus, one may think that attendance does not play a significant role on the achievement. On the other hand, few researches show that students with low attendance rate also do worse on standardized tests. Perhaps, contradicting results occur due to some variables such as frequency of attendance, previously taken courses (past experiences) or previous experience of comprehension of the related material. Attendance has a nonlinear relationship with academic achievement, which means its effect is observed after a percentage of absenteeism. In fact, essay type exams reveal that students with better attendance rate comprehend the course material better and have better essay type exam results than the students having less attendance rate. Absenteeism is a blocking instrument in the comprehension of the material (Durden & Ellis, 1995). Taking a glance upon the t values may provide further insights.

Highest t value is obtained from CAS6 (40.730). It is concluded from the t value, students with high positive attitude toward class attendance think that attending to classes is important to understand the course material (CAS6). Students having higher motivation toward understanding the course material also have higher motivation for better grades. Low t value obtained from CAS11 (13.255) already indicates the behavioral pattern of completing "homework assignments on time" is attitude related. Likewise, CAS1 ("importance of getting high grades", t= 19.085) exhibits similar pattern with CAS11. Lowest t value obtained from CAS13 (12.881) which is "expectation of teacher from the students" reveal the students' ideas about their image in the eyes of teacher. CAS13 reveals the reflection of motivation since students don't think attending classes is important for the teacher. Effect of motivation on student performance is very strong, and perhaps reason for high class attendance among the high grade getters may be explained through motivation (Cohn & Johnson, 2006) which might be shaped by some factors. For that reason, teachers' encouragement towards learning and attendance is important.

Fjortoft (2005) reports five factors are effective on attendance. Those factors are listed as classroom size, personal logistics, faculty behavior, lesson content and class scheduling. Gump (2005) indicates classroom size might be affective on attendance. Akkus (2013) reports logistics could cause absenteeism. Lesson contents which are informative also increase attendance. On the other hand, if handouts are not inclusive or, faculty or instructors do not provide the insight of the course materials then absenteeism rates increase. It is widely accepted that expertise of the instructors has effect on attendance. However, it should be noted that expertise also means skill of the instructors to pass experiences, real life settings and meaning of the material to the students (Fjortoft, 2005). Not surprisingly, instructors who are experts on the topics are not always regarded as good instructors by the students. Perhaps, course material might be enriched and become more meaningful if different techniques and approaches are used in the classrooms. Supporting lectures with complementary methods such as video assisted lectures, or recitation hours by research assistants might be helpful in increasing the meaningful learning. There are many motivational factors which are effective on attendance. Even, parents' attitudes toward attendance are effective on students' attitudes toward attendance (Hilal Bati et. al., 2013).

Understanding the effective factors on students' attendance could provide better attendance rates. For example, attendance rate is also affected by class scheduling. Hour breaks must be

placed between courses, classes etc. Placing same grade level courses to follow up each other is a general tendency for faculty managements in order to increase both attendance and efficiency of the faculties and students. On the other hand, this policy may (will) in fact have a reverse effect causing more absenteeism rates. Similarly, placing breaks more than 2 hours will also increase the absenteeism which is also affected by study habit of students. Students who do not have a planned study design, or simply do not study regularly have more absenteeism rates contrary to regular studiers (Fjortoft, 2005). Students with high management skills of time management also have better academic achievement (Hilal Bati et. al., 2013).

Conditioning the behavior to a specific outcome requires motivational factors. Changing the attitudes and behaviors may be achieved through changing the beliefs. For that reason, it is important to understand one's beliefs and attitudes to reveal the behaviors (Ajzen, 2005a). For some colleges, in order to change the behaviors, students are obliged to obtain a certain level of attendance. For example, university students in Turkey are obliged to provide a minimum %70 attendance rate in order to pass the course. Not surprisingly, a limited number of studies already indicate that student absenteeism in Turkish colleges is already approximately %32. Moreover, instructors and college directors inform students that they have %30 "absenteeism right". A misdirected communication language used by individuals approves the misguided behavior. Thus, students apprehend certain amount of absenteeism as their "right". Even items (questions) used in the scales approve this misguided behavior. Most scales direct the question of reason for absenteeism as "to use my absenteeism right". However, this apprehension drives the long-term motivational lack on both attendance and its importance on comprehension of the course material (Demirutku & Tekinay, 2016). High inner motivation might prevent such conditioning and help both students and instructors to avoid such conditioned behaviors. Be that as it may, any attempt asking the reason for absenteeism or introducing penalties for a certain level of absenteeism might be regarded as an attack on personal choices or rights, which may (will) catastrophically condition the behavior in the opposite desired direction. Thus, it is believed, either compulsory attendance should be cancelled or reinforcements should be introduced. For example, introducing points for % 10 attendance rate might encourage the students to attend the course. Doing so, not only will condition the behavior in the desired direction but also will let students to think that they are making their own choice and feeling of attacks on personal rights might be avoided (Senemoglu, 2013).

Lastly, Clark & Watson (1995) indicate a unidimensional scale obtained through a factor analysis is a good scale. Having both high internal consistency (α=.923) and one factor structure, it is believed CAS is a powerful scale for its purpose. As a final note, confirmatory factor analyses results confirmed that Class Attendance scale has a valid structure.

5. Conclusions and Recommendations

In order to increase the efficiency and quality of education, instructors should know their students' attitudes towards attendance since it is one of the key elements of a good learning environment. For that reason, researchers and teachers might use the created scale and observe their students' needs and attitudes, and naturally, they can use interventions and may offer solutions. For that reason, it is believed that created classroom attendance scale will be helpful for researchers and educators who want to use it in educational and social purposes. Perhaps through such studies, identifying problems and creating solutions will be possible more easily. It is also believed that created CAS might be used in neighborhood regions/states since they have similar cultural context with the sample. To this aim, both original CAS and an English version of it are provided in the appendixes. CAS with different samples is also welcome to compare the results and to validate its purpose. Consequently, researchers, instructors and educators may develop new scales based on CAS and add features related to specific outcomes such as attending to a specific course, or may add features to determine the factors for attendance/absenteeism. Hence, adding new dimensions and sharing the results are also encouraged. However, in such case reliability and factor structure of the scale should be restudied.

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6. Appendix

6.1. Appendix A: Original CAS

Madde	Ders Devam	Kesinlikle Katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle Katılıyorum
1	Yüksek not almak benim için önemlidir	1	2	3	4	5
2	Derslere devam önemlidir	1	2	3	4	5
3	Derslere katılmak önemlidir	1	2	3	4	5
4	Derslere devam, dersi daha iyi anlamamı sağlar	1	2	3	4	5
5	Derslere devam etmem, derslerden yüksek not almamı sağlar	1	2	3	4	5
6	Derslere katılım disiplinli biri olmamı sağlar	1	2	3	4	5
7	Verilen ödevleri zamanında yaparım	1	2	3	4	5
8	Ders hocası bütün derse devamımı ister/düşünür	1	2	3	4	5

6.2. Appendix B: English Version of CAS

Item	Class Attendance	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
1	Getting high grades is important for me	1	2	3	4	5
2	Attending the courses is important	1	2	3	4	5
3	Participating to lecture is important	1	2	3	4	5
4	Attending the lecture helps me to understand course material better	1	2	3	4	5
5	Attending the lecture helps me to get higher grades	1	2	3	4	5
6	Participating to the lecture helps me to become a more disciplined person	1	2	3	4	5
7	I do the homework assignments on time	1	2	3	4	5
8	Course instructor wants me (think I should) to attend all the lectures	1	2	3	4	5