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Tablet Use in Teaching: A Study on Developing an Attitude Scale for Academics

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ABSTRACT

Purpose: Measuring and understanding academics' attitudes towards adapting the use of tablets into teaching seem necessary because there is a need for control of attitudes before making decisions on tablet use in teaching. The purpose of this study was to develop a standard attitude scale towards tablet use in teaching. **Research Methods:** Five judges contributed in developing items for tablet use in higher education after a review of the related literature. 152 volunteer faculty members of higher education around the world participated in the study. To provide evidence of validity for the scale, item total correlation coefficients were computed by using SPSS 16.0. Kaiser-Meyer Olkin (KMO) coefficient for the sampling adequacy of the data for principal components analysis, and the principal components factor analysis were employed to determine the factor loadings of the items. A confirmatory factor analysis was also employed to support the structure of the scale. For the reliability of the scale, Cronbach's alpha (Crα) calculations were made. **Findings:** Item analysis showed that the 20-item scale had three factors comprising 71.848 percent of the total variance with Eigen values of 14.286, 2.378, and 2.019. Item validity values ranged between .43 and .65. The internal consistency of the scale was calculated as .88. **Implications for Research and Practice**: The results indicate that the attitudes towards tablet use in teaching can be measured in a valid and reliable manner before making institution-wise or country-wise decisions. Implementation of the scale in local and international levels to better understand the concerns and attitudes of academics can be recommended.

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Introduction

Whenever a new technology is introduced, it is not surprising to have some resistance to this technology. A better understanding of the underlining attitudes and concerns can help developers adopt such technology to address this issue. Nowadays, educational technologies including the use of tablets and smartphones have shown a remarkable increase of use (Cassidy, Colmenares, Jones, Manolovitz, Shen, & Vieira, 2014; Garrison, 2011; Haßler, Major, & Hennessy, 2016). The focus of the widely-held research on using tablets and mobile technologies to supplement and enhance the educational matter concentrates on whether these educational technologies have any sort of impact on learning and teaching. Their empirical results show mixed outcomes causing the business value of these technologies lack a strong knowledge base (Laiw, 2008). When reviewing the literature related to the value of technologies, theories of information systems put great emphasis on attitude towards the use of technology (Bobbitt & Dabholkar, 2001; Davis, Bagozzi, & Warshaw, 1989; Hebert & Benbasat, 1994). This attitude is declared among the critical success factors for a successful experiment of tablet use. The paper reviews the current literature on tablet use in education to build a picture of the current research direction, and reveal the constructs. In doing so, a case is put forward for an empirical tool that enables the measurement of attitude towards tablet use. Thus, the paper attempts to define the related constructs, develop a standard scale of measurement to determine the attitudes towards tablet use and verify its reliability and validity.

Exploiting technology in the form of e-learning to supplement classroom teaching has been the study of many studies (Bayliss, Connel, & Farmer, 2012; Daccord & Reich, 2015; Garrison, 2011; Georgiev, Georgieva, & Smrikarov, 2004; Liaw, 2008; Park, 2011). Dependency on technology has continued to develop over the last two decades from being an auxiliary tool to becoming part of the essential blended learning and a companion to class teaching (Young, 2002). While current publications have focused on the technology of delivery in the form of tablets and M-learning (Bayliss, Connel, & Farmer, 2012; Daccord & Reich, 2015; Georgiev, Georgieva, & Smrikarov, 2004; Park, 2011), there is a general agreement that there is potential academic importance for tablets, which are currently underutilized in academia although some valuable attempts have been made to highlight their potential (Daccord & Reich, 2015; Park, 2011; Sharples, Taylor, & Vavoula, 2010). There is an increased acceptance that personal computers and portable laptops are no longer the main e-learning tools for students (Georgiev, Georgieva, & Smrikarov, 2004). Tablets present distinctive features when compared to personal computers and laptops including lightness and extended use due to more efficient battery life (Maina, 2015). Other features including the ability to customise tablets for academic use have provided additional dimensions, which have not yet been considered in higher education (Safieddine, Nakhoul, Kayapinar, Spathopoulou, & Kadry, 2016).

Method

In this part of the study, the design of the research, the participants, data collection process, and the analysis of the data are presented.

Research Design

The purpose of the study was to develop an attitude scale for academics. For this reason, an empirical scale development process was employed with validity and reliability studies as questionnaires often seem to lack reliability and validity which might lead to difficulties in interpreting research results (Schriesheim, Powers, Scandura, Gardiner, & Lankau, 1993). For this reason, the method of the study flowed from Likert-type item development and scale try-out to validity and reliability analysis.

Participants of the Item Development Process

First of all, an open-ended question form was presented to five faculty members from different backgrounds and different colleges (college of education, business administration, engineering, liberal arts, and maths) who used or had used tablets in classroom practices. The items in this form included four topics based on the responses given for tablet use in the first round of the try-out: classroom management, teaching practices, student learning, and faculty development. The researchers acted as judges, and their responses were examined line by line in order to develop items. After an item pool including 63 items had been developed, four other judges, who were experts in educational sciences, evaluated the items. These judges were chosen among the ones who had been using tablets in teaching, and they were provided with a review of literature so that they could be more thoroughly informed. After the feedback from the experts had been received, the items were re-examined and revised for the try-out.

Participants of the Try-out Scale

The participants who responded to the try-out scale consisted of 152 volunteer faculty members from different countries (32 from Kuwait, 30 from Canada, 20 from the USA, 19 from Turkey, 18 from England, 13 from France, 4 from Saudi Arabia, 3 from Belgium, 3 from UAE, 2 from Brazil, 2 from Italy, 2 from Lebanon, 2 from Romania, 1 from Denmark, and 1 from Vietnam). Participants were randomly selected among teaching academics who had been invited via social media and email from different colleges. The participants were selected because of their convenient accessibility and diversity to an online try-out scale and to the researcher(s) in order to represent the variability of university teaching. The items were in English as it was the common language used in most universities around the world. In order to provide language validity as the respondents were from different countries around the world, the items were in the form of basic English sentences in simple present tense. Also, the participants had sufficient proficiency in English to able to read and understand a question in simple present tense, so they were able to respond to the items on a Likert-type scale. Responses of 13 participants were not included in the analyses because of incomplete responses to the items. The percentage of the respondents who owned a

tablet was 77, but the percentage of the respondents who used a tablet in teaching practices was only 34. No personal information was requested from the respondents except for some descriptives which are given in Table 1 below:

Table 1

Pilot Study Sample

Gender	%	Experience	Departments
Female	37	6-40 years	MIS, Education, Statistics, English, Computer Science, Special Education, Teacher Education, Language Education, Finance, SCS, Management, Translation, Business, Marketing, HRM, Nutrition, Mechanical Engineering, Adult Literacy, Industrial Engineering, Electrical Engineering, Informatics, Turkish, Language and Intercultural Communication, Computing and Technology
Male	63		

Research Instrument

The items in the scale were constructed and structured in different headings such as tablet use in teaching practices, tablet use in student learning, and tablet use in faculty development. Later, some other questionnaires and surveys related to tablet use in schools and/or technology use in education were examined to give ideas about the terminology and phraseology to be used in the try-out scale. In the first run, there were 63 items, together with the reversed items, intended to measure tablet use attitude in teaching, and these items were generated under three headings namely teaching practices, student learning, and faculty development. After the comments had been received from the judges, 47 items, including reverse items, were decided to be used in the try-out scale. Although some headings were used in the item development process, the items were shuffled in the try-out process as not to direct the respondents and create bias. The items were re-examined, and they were suggested to be compiled under the headings of tablet use in teaching practices, student learning, and faculty development as those items were developed under these headings during the item development process.

Here, the operational definition of attitude is taken as *a psychological tendency* (Eagly & Chaiken, 1993) expressed by evaluating tablet use in teaching with some degree of favour or disfavour. Five experts-one in measurement and evaluation, two in language teaching, one in educational technology, and one in computer engineering- again examined the initial scale items to assure the content validity and the representation of the domain content, and a 47-item try-out scale was built and used for the study.

The scale was developed in Likert (1932) format on a 5-point scale ranging from "Strongly Agree" on one end to "Strongly Disagree" on the other. A 5-point scale was chosen for collecting levels of agreement of the respondents as sorting response categories on a 5-point scale was seen more convenient, meaningful, and easier to respond.

Data Collection

The data were collected by using an online survey software. In order to guarantee anonymity, no personal information was requested from the respondents, and Respondent Anonymity Assurance (RAA) was enabled by the researcher(s). Once RAA is enabled, it will remain perpetual and cannot be rescinded by the researcher(s) or anyone else. In this way, the software never presents a respondent's email address linked to the response data in any of the analysis tools, reports, and data downloads.

Data Analysis

The collected data were analysed by using SPSS 22, Microsoft Office Excel 2010, and LISREL 8.3. The analyses were carried out to ensure validity and reliability of the scale, and to provide supportive evidence to the factor structure of the scale. The following are the data analysis tools used in the study:

- Test-Retest reliability and Cronbach's (Cronbach, 1951) alpha (Crα) calculations for reliability
- Item-total test correlations for item validity measures
- Kaiser-Meyer Olkin (KMO) coefficient for the sampling adequacy of the data for principal components analysis
- Factor Analysis for construct validity
- Exploratory factor analysis to evidence the possibility of the scale structure for similar samples.
- Confirmatory factor analysis to provide supportive evidence to the factor structure of the scale.

The selection of the items was made via analysis results of item-total correlations and the factor structure of the scale. In addition, the internal consistency of the scale was computed by using Cronbach's alpha.

Results

This section presents the results of the analyses for the validity and reliability evidence of the scale.

Factorability of the Scale

Kaiser-Meyer-Olkin (KMO) coefficient of the try-out scale was calculated to identify the factorability of the scale and the sampling adequacy of the data for the analyses. The analysis resulted in a 0.833 KMO value which indicated that the data were highly suited to factor analysis. Bartlett's test of sphericity value was also significant as it was found 3642.078 ($p<0.01$).

Validity Evidence

In order to provide evidence for the content validity of the scale, four judges, who were experts in educational sciences, evaluated the items after the item development process mentioned in the research instrument section earlier had been completed. These judges were chosen among the faculty members who had been using tablets in teaching, and they were provided with a review of literature so that they could be more thoroughly informed. They examined the content representativeness and the content relevance of the items, and, with consistent judgements, they reached an agreement ratio of 100.00. Later, two experts, one in linguistics and one in language teaching, examined the items considering the content and some technical features such as language use and mechanics.

To collect evidence for the construct validity of the scale, components analysis with Varimax rotation was employed. Factor analysis showed that the factor loadings of 27 items (1, 2, 3, 6, 7, 8, 14, 15, 16, 19, 20, 22, 23, 24, 25, 27, 30, 31, 32, 33, 34, 35, 39, 40, 41, 42, and 46) did not characterize the attitude; hence, they were removed from the analysis. The items kept for the analysis had a 3-factor structure. The first factor had 10 items which were 4, 5, 9, 10, 11, 12, 13, 17, 18, and 21. The Eigenvalue of the first factor was 14.286, and it explained 54.944 % of the variance. The second factor had six items which were 26, 28, 29, 36, 37, and 38. The Eigenvalue of the second factor was 2.378, and it explains 9.142% of the variance. Finally, the third factor has 4 items which are 43, 44, 45, and 47. The Eigenvalue of the second factor was 2.019, and it explained 7.762% of the variance. These factors together explain 71.848 % of the total variance of the attitude towards tablet use in teaching. The factor loadings of the items ranged between 0.456 and 0.843. In order to find evidence for the item validity and the homogeneity of the items in the scale, item-total test correlations were computed, and the values ranged between .42 and .65. These findings of factor analyses and item-total test correlations indicated that the scale had construct validity, and the items in the scale measured the same construct which was intended to be measured. The total variance and the rotated factor loading matrix (Varimax) giving validity evidence of the scale are presented in Table 2 below:

Table 2

The Rotated Factor Loading Matrix (Varimax), Eigenvalues, and Total Variance

Item No	Item No in the scale	Item	Factor 1	2	3
1.	12	A tablet would contribute to my development of being a more organized teacher.	.795		
2.	10	A tablet would contribute to my development of being a more effective teacher.	.780		
3.	9	Using tablets would help me present my material in a more organised way.	.723		
4.	21	The courses I am teaching will greatly benefit from the use of tablets.	.709		
5.	4	The courses I am teaching would greatly benefit from the use of tablets.	.694		
6.	5	The courses I am teaching would not benefit from the use of tablets.	.655		
7.	18	A tablet would contribute to organising the teaching material.	.587		
8.	11	A tablet would contribute to my development of being a more creative teacher.	.539		
9.	17	Tablets would be used in innovative ways that go beyond the traditional approach.	.474		
10.	13	I would use a tablet for presenting the material in the classroom.	.456		
11.	29	A tablet would contribute to student participation in the classroom.		.817	
12.	26	A tablet would increase student-student interaction in the classroom.		.789	
13.	28	A tablet would increase teacher-student interaction in the classroom.		.785	
14.	36	Tablet use promotes an active learning environment.		.677	
15.	38	A tablet would be encouraging for the students to explore learning topics.		.520	
16.	37	Tablet use would have a positive impact on their learning experience.		.488	
17.	47	Instructors would adopt a more proactive way to approach the subject.			.843
18.	45	Instructors would be more motivated to adopt a more proactive way to approach the subject.			.830
19.	44	Instructors would be more motivated to review the way they teach.			.728
20.	43	Instructors would be more motivated to adopt a more personalised way to approach the subject.			.581
		Eigenvalues	14.286	2.378	2.019
		% of Variance	54.944	9.142	7.762

Table 2 gives evidence of three possible factors and their relative explanatory powers. Three factors comprised 71.848 of the total variance. As seen in the table, factor 1 accounted for 54.944% of the variance with an Eigenvalue of 14.286; factor 2 accounted for 9.142% with an Eigenvalue of 2.378; and factor 3 accounts for 7.762% with an Eigenvalue of 2.019. This might mean that the scale items represented the intended behaviour with a total of almost 72%, and the complexity of the data set could be reduced using these factors with a loss of information of 28%. Item validity coefficients are also given in the following table:

Table 3

Item Validity Coefficients of the Scale İtems

Item No	Item No in the scale	Correlation Coefficient	Item No	Item No in the scale	Correlation Coefficient
1.	4	.65	11.	26	.43
2.	5	.43	12.	28	.44
3.	9	.52	13.	29	.46
4.	10	.58	14.	36	.51
5.	11	.56	15.	37	.52
6.	12	.57	16.	38	.45
7.	13	.43	17.	43	.56
8.	17	.53	18.	44	.48
9.	18	.56	19.	45	.42
10.	21	.62	20.	47	.43

The structure of the scale based on factor analysis revealed three components considering the relevant literature and the items included in these factors. These components were examined, and they were suggested to be compiled under the headings of teaching practices, student learning, and faculty development as those items were developed under these headings during the item development process.

A confirmatory factor analysis was also conducted to provide evidence for the three-factor structure of the scale. The confirmatory factor analysis supported the three-factor structure that emerged from the exploratory factor analysis. The estimates computed ranged between .57 and .96, and the t-values were significant ($p<.05$). The results are presented in the following Table 4.

As seen in the table, the items in the scale had moderate to strong standardized loadings. $\chi 2$ statistic for model fit is 5.63 (df=167), which was too small to reject the null of a good fit (p=.314). In addition, RMSEA declined to .014 (below .05), which was small enough to indicate a good fit. Fit indices such as GFI, SRMR, AGFI, CFI, and NFI also suggested that the factor structure fit the data (GFI=.96, SRMR=.06, AGFI=.91, CFI=.92, NFI=.90). The results suggested that the model fit the data, and the underlying structure of the scale was composed of three factors that measured the attitudes towards tablet use in teaching indicating that each item contributed significantly to the scale.

Table 4

Estimates, t-Values, and Standardized Coefficients of the Scale İtems

	Factor				
Item No	1	2	3	t-values	R^2
4	.70			8.61	.72
5	.57			6.64	.58
9	.81			10.74	.72
10	.94			13.66	.83
11	.77			9.84	.66
12	.89			12.36	.80
13	.70			8.64	.57
17	.67			8.16	.53
18	.80			10.40	.69
21	.86			11.61	.82
26		.87		11.87	.95
28		.83		11.04	.89
29		.82		11.97	.96
36		.87		11.91	.81
37		.68		8.25	.52
38		.63		7.46	.53
43			.69	8.58	.54
44			.79	10.30	.60
45			.96	14.15	.76
47			.93	13.30	.80

Reliability Evidence

To find evidence for the reliability of the scale, item-total test correlations and Cronbach's alpha reliability coefficient were computed for the items in each factor. A table listing these factors against each question was then generated. The results are given in Table 5 below:

Table 5

Item-Total Test Correlations of the Items of Each Factor

Item No	**Item No in the scale**	**Factor 1 Total & Sub.**		**Crα**	**Item No**	**Item No in the scale**	**Factor 2 Total & Sub.**		**Crα**	**Item No**	**Item No in the scale**	**Factor 3 Total & Sub.**		**Crα**
1.	4	.65	.66	.86	11.	26	.43	.45	.84	17.	43	.56	.60	.80
2.	5	.43	.45		12.	28	.44	.45		18.	44	.48	.46	
3.	9	.52	.54		13.	29	.46	.43		19.	45	.42	.44	
4.	10	.58	.51		14.	36	.51	.48		20.	47	.43	.48	
5.	11	.56	.53		15.	37	.52	.54						
6.	12	.57	.52		16.	38	.45	.49						
7.	13	.43	.40											
8.	17	.53	.48											
9.	18	.56	.51											
10.	21	.62	.59											
Crα	.88													

As seen in Table 5, Crα reliability of the scale was .88. Crα of the first factor was .86; Crα of the second factor was .84; and Crα of the third factor was .80. The findings showed that the reliability of the scale was significantly high. The correlations between total scale scores and factors are given in Table 6 in the following:

Table 6

Correlations between Total Scale Scores and Factors

	Scale Total	Factor 1	Factor 2
Factor 1	.87		
Factor 2	.85	.66	
Factor 3	.80	.54	.60

The legend of the table provided evidence that the correlations between total scores and each factor ranged between .54 and .87 ($p<0.01$), and they were significant. The correlations between factor 1 and 2, 1 and 3, and 2 and 3 were also significant at the same level ($p<0.01$). These results proved that these three factors were components of the attitude towards tablet use in teaching.

Discussion, Conclusion and Recommendations

In this study, a valid and reliable scale for measuring the attitudes towards tablet use in teaching was developed to be used by academics and/or the decision makers planning to integrate tablet use in curricula. 152 volunteer faculty members from different countries participated the study to respond the try-out scale. The items were presented in English as it was the common language used in most universities around the world. As the respondents were from different countries around the world, in order to provide language validity, the items were in the form of basic English sentences. The participants had sufficient proficiency in English to be able to read and understand a question in basic English, so they were able to respond to the items in a Likert-type scale. A 5-point scale was used for collecting data to make it easier for the respondents to respond, and to obtain a total number which could be employed in analyses. Based on the results of the analyses, the internal consistency of the scale provided strong evidence for attitudes towards tablet use in teaching, and the scale could be effectively used to measure particular attitudes towards tablet use in teaching practices, student learning, and faculty development as the structure of the scale based on factor analysis revealed three components which were teaching practices, student learning, and faculty development. The content validity of the scale was evidenced by experts and judges with a background in educational sciences reaching a consensus of 100%. Factor analyses were employed to provide evidence for the construct validity of the scale. Repeated factor analyses revealed a 20-item scale which had three factors explaining 71.848% of the total variance. The factor loadings of the items range between 0.456 and 0.843. The first component accounted for 54.944% of the variance with an Eigenvalue of 14.286; the second accounted for 9.142% with an Eigenvalue of 2.378; and the third accounted for 7.762% with an Eigenvalue of 2.019. In order to find evidence for the item validity and the homogeneity of the items in the scale, item-total test correlations were computed, and the values ranged between .42 and .65. These

findings of factor analyses and item-total test correlations indicated that the scale had evidence of construct validity, and the items in the scale could measure the same construct which was intended to be measured. The confirmatory factor analysis also provided evidence for the underlying structure of the scale. The fit indices for the three-factor model and the standardized estimates of the items indicated a good fit. Cronbach's alpha reliability coefficient (Crα=.88) showed that the reliability of each component was significantly high. Crα of the first factor was .86; Crα of the second factor was .84; and Crα of the third factor was .80. The correlations between each pair of components were also significant at the same level ($p<0.01$). These results proved that these three components were factors of the attitudes towards tablet use, and this scale could be used for measuring attitudes of academics on tablet use. Standard comparisons among different samples are also possible by using this scale. Beside the shortage of empirical studies held on this particular subject, there are some survey attempts by using questionnaires and semi-structured interviews regarding iPad use at schools examining student behaviours which are generally positive such as for fostering student engagement, motivation, independent research, and participation (Hallissy, Gallagher, Ryan, & Hurley, 2016). Still, as rapid developments in technology appear day by day, this study might be worth to make amendments in curricula and lead educators and decision makers to step forward by considering tablet use for possible effectiveness in education.

Although this study was carefully conducted, the researchers are aware of its limitations and shortcomings. The questionnaire quite often fails to cover very busy and pre-occupied people among the respondents, or the type of respondents who need to conceal a lot about themselves. Saunders, Cienkowski, Forsline, and Fausti, (2005) explain the limitations of questionnaires with regards to the expected result, which might, for example, highlight trends or attitudes, but will fail to explain the underlying reasons for the result. A multi-method approach, where the researcher combines questionnaires with, for instance, interviews to explain the results, is therefore proposed. In addition, further studies with larger samples might be needed for examining the structure of the scale and studying the attitudes of students on tablet use, the effect of attitudes on tablet use in teaching and learning environments, and/or the relationship between attitudes towards tablet use and some other variables such as student success, self-efficacy of teachers and/or faculty, and motivation in different subjects. Furthermore, cross-cultural comparisons can be made and generalizability studies can also be conducted by using the scale items. Further research might also employ the scale not only in a variety of educational contexts but also in business contexts such as company training.

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Öğretimde Tablet Kullanımı: Bir Tutum Ölçeği Geliştirme Çalışması

Atıf:

Kayapinar, U., Spathopoulou, F., Safieddine, F., Nakhoul, I., & Kadry, S. (2018). Tablet use in teaching: A study on developing an attitude scale for academics. *Eurasian Journal of Educational Research, 78,* 219-234, DOI: 10.14689/ejer.2018.78.11

Özet

Problem Durumu: Kimi çalışmalar, eğitim ve öğretimde tablet kullanımının olumlu sonuçlar verdiğini gösterse de yüksek öğretimde, akademisyenlerin tablet bilgisayarı bir eğitim aracı olarak kabul edip etmeyecekleri konusu üzerine ampirik bir çalışma görülmemektedir. Bu durum, akademisyenlerin tablet kullanımını öğretim süreçlerine dahil etmelerini ve buna iliskin tutumlarını, düşünce ya da kaygılarını tartışılır hale getirmektedir. Yüksek öğretimde tablet kullanımına ilişkin alınacak kararların, akademisyenlerin tutumlarının ölçülerek bilinçli bir şekilde alınması mantıklı olacaktır. Söz konusu tutumların ölçülmesi için standart karşılaştırmalara olanak sağlayan bir ölçeğin geliştirilmesi uygun olacaktır.

Çalışmanın Amacı: Bu çalısmanın amacı, tablet bilgisayarların yüksek öğretimde bir eğitim aracı olarak kullanımına ilişkin akademisyen tutumlarının ölçülmesi amacıyla standart karşılaştırmalara olanak sağlayacak geçerli ve güvenilir bir ölçeğin geliştirilmesidir.

Yöntem: Denemelik maddelerin geliştirilme aşamasında beş uzman yargıcı katkıda bulunmuştur. Geliştirilen maddelerin yanıtlayıcıları dünya çapında 152 gönüllü akademisyenden oluşmaktadır. Ölçeğin geçerliğine kanıt oluşturmak için madde toplam test korelasyon katsayıları SPSS16.0 kullanılarak hesaplanmıştır. Örneklem yeterliğinin ölçülmesi için Kaiser-Meyer Olkin katsayısı hesaplanmış, maddelerin faktör yüklerinin hesaplanması için ise temel bileşenler analizi yapılmıştır. Faktörlerin faktör yapılarına uygunlugunu sınamak amacıyla Doğrulayıcı Faktör Analizi yapılmıstır. Ölçeğin güvenirliğinin ölçülmesi için Cronbach Alpha katsayısı hesaplanmıştır.

Bulgular: Madde analizi sonucunda 20 maddelik, toplam varyansın yüzde 71.85'ini açıklayan ve Eigen değerleri 14.286, 2.378 ve 2.019 olan 3 faktörlü bir ölçek elde edilmistir. Madde geçerlik düzeyleri .43 ile .65 arasinda değismektedir. Ölçeğin iç tutarlık katsayısı .88'dir.

Sonuçlar ve Öneriler: Sonuçlar, ülke ya da kurum bazında köklü kararlar almadan önce, tablet kullanımına ilişkin tutumların geçerli ve güvenilir bir şekilde ölçülebilmesini sağlayacak bir ölçek ortaya koymuştur. Geliştirilen ölçeğin, ulusal

ya da uluslararası düzeyde akademisyen tutumlarının ölçülmesinde ve standart karşılaştırmaların yapılmasında büyük ölçekli kullanımı önerilebilir.

Anahtar Sözcükler: Tablet, tutum, ölçme, geçerlik güvenirlik.