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Kanbay Presentation Evaluation Form: A Theoretical Study of Form Development

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ABSTRACT
Objective: This study aimed to develop a theoretical form based on Lawshe's method in order to evaluate the presentations in the light of scientific and objective criteria in educational environments. **Materials and Methods:** In this respect, literature was reviewed and a items pool was created, then a draft form was created by taking expert opinion (n=12), and finally the trial form was re-submitted to the expert assessment (n=25). The form was finalized by calculating the content validity ratio (CVR), content validity index (CVI) and the Fleiss Kappa coefficient. **Results:** In Lawshe's method, the content validity ratio (CVR) should be at the significance level α=0.05 with a minimum value of 0.44, so that the findings obtained from 25 experts can be considered valid. For this reason, CVR was calculated for each item in the trial form and all items were found to be above the required level of 0.44. In the next step, CVI was computed for the obtained 20 items, and determined as 0.88. The content validity of the form was concluded to be statistically significant since the value of CVI (0.88) was observed to be higher than CVR (0.44). Concordance between experts was examined for the reliability of the form. To this end, Cohen kappa coefficient was calculated and found to be 0.84.
Conclusion: As a result, Kanbay form which was developed to evaluate students' presentations in educational programs in an objective and scientific way, was concluded to be statistically valid and reliable.
Keywords: Evaluation Scale, Validity, Reliability.

Kanbay Sunum Değerlendirme Formu: Kuramsal Form Geliştirme Çalışması

ÖZ
Amaç: Bu çalışma, eğitim ortamlarında gerçekleştirilen sunumların bilimsel ve objektif ölçütler ışığında değerlendirilmesi amacı ile Lawshe tekniğine dayalı kuramsal bir form geliştirilmesi amacı ile yapılmıştır. **Gereç ve Yöntem:** Bu doğrultuda literatür taranarak soru havuzu oluşturulmuş ve taslak form oluşturmak için uzman görüşü alınmış (n=12) ardından oluşturulan deneme formu tekrar uzman değerlendirmesine sunulmuştur (n=25). Forma son şekli, kapsam geçerlik oranları (KGO), kapsam geçerlik indeksi (KGİ) ve Cohen Kappa katsayısı hesaplanarak verilmiştir. **Bulgular:** Lawshe tekniğinde, 25 kişilik uzman grubundan elde edilen bulguların geçerli olabilmesi için formun kapsam geçerlik ölçütünün (KGÖ) α=0.05 anlamlılık düzeyinde ve minimum 0.44 değerini taşıması gerekmektedir. Bu sebeple deneme formundaki her bir ifade için kapsam geçerlik oranı hesaplanmış ve tüm maddelerin alt sınır olan 0.44 değeri üstünde olduğu tespit edilmiştir. Bir sonraki aşamada elde edilen 20 madde için de kapsam geçerlik indeksi hesaplanmış 0.88 değeri aldığı tespit edilmiştir. KGİ değerinin (0.88), KGÖ (0.44) değerinden yüksek olduğu görülerek deneme formunun kapsam geçerliliğinin istatistiksel olarak anlamlı olduğu sonucuna ulaşılmıştır. Formun güvenilirliğini için uzmanlar arası uyum incelenmiş bu amaçla Cohen Kappa katsayısı hesaplanmış ve 0.84 değeri elde edilmiştir. **Sonuç:** Çeşitli eğitim programlarında öğrencilerin yapmış olduğu sunumların eğitimciler tarafından objektif ve bilimsel bir yolla değerlendirilebilmesi amacı ile geliştirilen formun istatistiksel olarak geçerli ve güvenilir olduğu sonucuna ulaşılmıştır.
Anahtar kelimeler: Değerlendirme Ölçeği, Geçerlilik, Güvenilirlilik.

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INTRODUCTION

Education is a critical issue for the progress of a society, especially how the education and training of the young generation should be implemented. Education of the younger generations determines their contribution to the society throughout their professional life, as well as their individual development. Implementation of this contribution at the highest level is a subject requiring the individual to improve himself by realizing his mistakes as well as accessing to, receiving and processing information (Baturay et al., 2017; Ferizat & Kuat, 2021). Measurement and evaluation in learning and teaching processes have many dimensions and purposes. Turgut (1984) pointed out that the level of educational success should be known. Determining students' learning levels and performances properly throughout this process, would enable them to increase their level of success and the quality of education (Martins et al., 2019).

Today, evaluations are made in education in accordance with the banking concept of education, which is on the basis of an exam result or on a product obtained, in order to determine whether the student is successful or not. Feedback is given to the students' presentations in schools in a very generalized approach as "well done" or "not good". It was pointed out that such an assessment would not be adequate for the student neither to appreciate nor to improve oneself (Larson et al., 2019). They were noted to be far away from objectivity, providing no feedback that would enable students to improve, on the contrary, would cause emotional breakdown on the students giving presentation, demotivate them and lead to confusion (Czajka & McConnell, 2019). A student cannot fully analyze what is expected of him when he does not know where the mistake is. In this sense, a successful assessment of a presentation requires to be based on the criteria determined in an objective, clear and understandable way (Sumiyarrini et al., 2017). This will also allow the presenter to see where his mistakes originate from. It is quite apparent that determining the performance of a presentation according to objective criteria will also serve to reveal the shortcomings and enable similar presentation activities to be performed through a more realistic planning.

Reviewing the relevant literature revealed that methods such as portfolio evaluation, performance evaluation, self-assessment, peer evaluation as well as complementary assessment tools such as rubrics, projects, concept maps, etc. have been used for determining academic success of a student throughout the education process (Aktan, 2020; Döş, 2016; Köse et al., 2016; Özbasi & Arcagök, 2019; Reddy, 2011; Tekalmaz & Kezer, 2020). However, educators, in other words presentation evaluators, face various problems despite all these assessment tools. In various studies, educators pointed out that the existing evaluation forms were not functional at all, achieving no goal, complicated, time-consuming to apply, having too many items and numerous unnecessary and unclear criteria (Van Steenbrugge et al., 2010).

The aim of this study was to develop a presentation evaluation measurement tool (a form) for assessing students' presentation performances in educational environments by using scientific criteria and to contribute them to improve presentation skills through proper feedback. Measurement process required for quantitative analysis models in behavioral sciences is implemented via scales developed by field experts focused on measuring a psychological structure.

These tools enable various features to be observed such as the duration of the process, the materials used during that process, the information system used for the audience, the language and the style used by the performer throughout the process. Therefore, performance measurement becomes necessary when the presenter is asked to follow a certain procedure and to present the conceptual framework that he wants to convey to the target audience by following a certain method (Tekin, 2000).

These scales are created by starting from theory then put into practice. For this reason, measurement tools are designed either in theoretical form-experimental form or only in theoretical form (hypothetical form) in scale development studies. There are some differences between these two approaches in terms of the application of measurement tools and validity studies (Yurdugül, 2019). Developing a theoretical form was preferred in this study in order to assess the presenting students by means of scientific and objective criteria and to give them objective feedback.

Adoption of the constructivist approach in teaching after 2004 increased the practice of new approaches such as self-assessment and peer assessment, enabling the students to actively participat the assessment process. These advancements created the need to establish criteria for objective evaluation. Accordingly, evaluation criteria were elaborated with regard to presentations and the "Kanbay Presentation Evaluation Form" was created. Ultimate attention was shown to ensure the criteria in the aforementioned form to be short, apprehensible and extremely objective in terms of assessment. It is considered that the scale providing practicality for the users, would also provide an objective assessment for the teacher as well as healthy feedback for the student, hence satisfying an important need.

MATERIALS AND METHODS

Procedure

Development of the presentation evaluation form consisted of the phases, respectively, creating a question pool; obtaining expert opinion; determining the scaling items; creating a draft form; determining content validity ratio; determining the items according

to the content validity indices, and finalizing the theoretical form.

Creating an Item Pool: Following a detailed literature review, relevant statements were included in the question pool. Furthermore, the form was prepared including sample expressions and educators were asked to note down what they pay attention to in the presentations; and what they rate while evaluating a presentation; and what they expect from a presentation. Afterwards, these statements were brought together and arranged to form a question pool consisting of 25 items.

Table 1. Information on the experts.

Gender	Title			Total
	Prof.Dr.	Ass.Prof.Dr.	Dr.	
Female	2	6	10	18
Male	0	4	3	7
Total	2	10	13	25

Obtaining expert opinion for the draft form: Opinions of 12 expert academicians were taken regarding the statements in the draft form (25 items). Considering these experts' feedback, it was concluded that five items were not related to the conceptual framework of the subject and excluded from the form. The draft form was then rearranged with 20 items.

Creating the Trial Form: The draft form was presented to the expert opinion with a Likert type rating as "Essential", "Useful but not essential" and "Not essential". Informative e-mails were sent to the experienced academicians, explaining the conceptual framework of the subject and the objective of the study and they were invited to participate in the study. A draft form was also sent them a few days later. This approach motivated the experts to participate in the study. Feedback was obtained from 25 of the 32 experts consulted. Gender, title and number of 25 experts are presented on Table 1.

Statistical analysis

Analysis of the obtained data consisted of four phases: calculating content validity ratio (CVR); calculating content validity index (CVI), calculating Cohen Kappa reliability coefficient, and Kendall's W compliance review.

Calculation of content validity ratio (CVR): Construct validity is usually determined by factor analysis as a statistical method, if the theoretical form-experimental form approach will be used in scale development. If it is only the theoretical form that will be created then expert opinions are sought and the content validity coefficient is tested, expressing the consistence between expert opinions (Yurdugül, 2019). Accordingly, the content validity ratios were obtained by collecting experts' opinions on any item. There are two techniques frequently used for determining content validity ratio (CVR). One is the Dawis technique, and the other is the Lawshe technique.

Expert opinions are graded in the Dawis technique as "The item is appropriate", "The item should be slightly revised", "The item should be seriously revised" and "The item is not suitable". The content validity ratio for the item is obtained by dividing the sum of experts who marked "The item is appropriate" as well as "The item should be slightly revised" by the total number of experts. In this technique, the content validity value is expected to be at least 0.80 for the item to be acceptable (Davis, 1992; Grant & Davis, 1997).

The Law she technique, however, requires a minimum of 5 and a maximum of 40 expert opinions. Expert opinions on each item are graded as "The item measures the targeted structure", "The item is related with the structure but unnecessary" or "The item does not measure the targeted structure". Besides content validity, expert opinions can be graded for understandability of the item, its relevance to the target audience, etc. (Yurdugul, 2005).

Content validity ratios (CVRs) are obtained by subtracting 1 from the ratio of the number of experts giving their opinion on any item as "Necessary" to half of the total number of experts giving their opinions on that item (CVR=[NG/(N/2)]–1). Items with negative CVR values or 0 CVR values are those excluded in the first place. The significance of the items with positive CVR values are tested with statistical criteria (Yurdugul, 2005). Veneziano and Hooper (1997) have converted the minimum values (content validity ratios) at the $p<0.05$ significance level into a table 2 for easy calculation. According to this, the minimum values concerning the number of experts also give the statistical significance of the item.

Calculation of Content Validity Index (CVI): CVR is used for accepting or rejecting certain items, while CVI is calculated for the entire test. In this case, the CVI value is obtained by calculating the average of the CVR values of the items determined to be included in the scale (Lawshe, 1975).

Calculation of reliability

The Cohen Kappa coefficient was calculated for testing the compatibility between the experts with a view to examine the reliability of the form. Cohen's kappa statistic is used to determine the compatibility between the evaluations made by two or more observers (Şencan, 2005). In addition, Kendall's W Coefficient of Concordance was calculated to test the compatibility between observers.

Obtaining the theoretical form: A greater CVI value with respect to CVR value (CVI>CVR) following the expert opinions, indicates a statistically significant content validity of the included items in the scale. In other words, a smaller CVI value than the CVR value indicates that the items of the scale do not have content validity (Batdı, 2013; Lawshe, 1975).

Ethical consideration

Ethical permissions required for the study were obtained from Artvin Coruh University Scientific Research and Publication Ethics Committee (the session number E.14507).

RESULTS

The trial form was submitted to the evaluation of 25 experts. According to the Lawshe technique, the content validity criterion should take a minimum value of 0.44 at the α=0.05 significance level, for the findings obtained from a group of 25 experts to be valid. Data, obtained from the experts for the content validity of the presentation evaluation form that was intended to be developed in this study, were tested by determining the content validity ratios and calculating the content validity index. In line with experts' opinions, CVR was calculated for each item of the trial form, and there was no item with zero or negative values (Table 2).

Table 2. Expert group content validity table.

Number of the Expert	CVR Value	Number of the Expert	CVR Value	Number of the Expert	CVR Value	Number of the Expert	CVR Value
5	1	14	0.571	23	0.391	32	0.375
6	1	15	0.6	24	0.417	33	0.333
7	1	16	0.5	***25**	**0.44**	34	0.353
8	0.75	17	0.529	26	0.385	35	0.314
9	0.778	18	0.444	27	0.407	36	0.333
10	0.8	19	0.474	28	0.357	37	0.297
11	0.636	20	0.5	29	0.379	38	0.316
12	0.667	21	0.429	30	0.333	39	0.333
13	0.538	22	0.455	31	0.355	40	0.3

(Minimum/Critical Values of CVRs at α =0.05 Significance Level (CVR= CVR critical), * CVR value for 25 experts was 0.44.

This finding presented in Table 3 indicated that all items of the trial form were suitable for calculating the content validity index. Therefore, the content validity index of 20 items of the trial form was decided to be calculated. And it was calculated as 0.88.

Table 3. CVR and CVI values of the trial form.

Item Number	Item	Adequate	To be improved	To be removed	CVI
I.1	Starts presentation on time	25	0	0	1
I.2	Prefers appropriate dress for the presentation.	23	2	0	0.84
I.3	Prepares the materials to be used in the presentation in advance.	24	0	1	0.92
I.4	Informs the audience properly about the presentation flow.	24	1	0	0.92
I.5	Establishes proper eye contact with the audience	25	0	0	1
I.6	Uses comprehensible language.	25	0	0	1
I.7	Uses voice tone effectively.	24	1	0	0.92
I.8	Uses gestures and mimics effectively	23	2	0	0.84
I.9	Uses a fluent pattern throughout the presentation.	24	1	0	0.92
I.10	Explains the concepts / terms used in the presentation.	20	5	0	0.6
I.11	Utilizes up-to-date information	24	0	3	0.92
I.12	Uses teaching techniques in the presentation.	21	4	0	0.68
I.13	Maintains group management successfully.	22	2	1	0.76
I.14	It keeps the audience attention active throughout the presentation.	25	0	0	1
I.15	Masters the subject.	25	0	0	1
I.16	The presentation appeals to the level of the audience.	24	1	0	0.92
I.17	Encourages free discussion of different ideas.	22	3	0	0.76

Table 3 (continued). CVR and CVI values of the trial form.

I.18	Summarizes the subject in a few sentences at the end of the presentation.	22	3	0	0.76
I.19	Answers questions about the issues that are not understood at the end of the presentation.	25	0	0	1
I.20	Completes the presentation on time.	23	2	0	0.84
Number of experts= 25					
Content Validity Rate (CVR)= 0.44					
Content Validity Index (CVI)= 0.88					

In theoretical form development studies, the CVI value must be greater than the CVR value (CVI>CVR) for achieving a statistically valid form. As can be seen in Table 4, it was concluded that the values obtained in this study were CVI (0.88)>CVR (0.44), yielding a trial form with statistically significant content validity.

Table 4. Fleiss cappa value.

			Kappa			Fleiss' Kappa		
n	**m**	**Point**	**Kappa**	**z**	**p**	**Kappa**	**z**	**p**
20	5	1 Point	0.843	12.506	0.000	0.752	18.6	0.000
		2 Points	0.621	10.332	0.000			
		3 Points	0.696	11.110	0.000			
		4 Points	0.790	11.566	0.000			
		5 Points	0.650	10.523	0.000			

Fleiss Kappa statistics were used for inter-rater reliability. The Fleiss Kappa value was calculated for 5 evaluators. The Kappa value obtained for the form was calculated as 0.752.

It was determined that the form obtained according to the Kendall's W concordance analysis, testing the reliability of agreement among experts, had goodness of fit between experts (n=25; df=19; Kendall's W=0.069; p<0.05) (Table 5).

Table 5. Kendall's W analysis of concordance among experts.

Item Number	Average Order	Item Number	Average Order	Item Number	Average Order	Item Number	Average Order
M1	9.88	M6	9.88	M11	10.68	M16	10.28
M2	10.68	M7	10.28	M12	11.48	M17	11.08
M3	9.88	M8	10.68	M13	11.08	M18	11.08
M4	10.28	M9	10.28	M14	9.88	M19	9.88
M5	9.88	M10	11.88	M15	9.88	M20	11.08

n=25, **Kendall's W**=0.069, **X^2**=32.66, **DF**=19, **p**=0.026

DISCUSSION

It is anticipated that this present study, planned to contribute to the objectivity of the measurement-assessment criteria in education, will also help the measurements of student performances to become more beneficial. Performance measurement is defined as a way of displaying what a student can do with the knowledge he/she has, hence, it is essential that appropriate assessment tools should be used for that specific performance to be measured. If appropriate, sharing the assessment criteria of the "Kanbay Presentation Evaluation Form" with the students before they start preparations for the presentation will be very helpful in terms of the quality of the education. Sharing these designated criteria with the students would help the expected performances to be actualized, and eventually presentation quality would increase.

The required statistical procedures were implemented for the theoretically developed “Kanbay Presentation Evaluation Form” and the content validity of the form was ensured. The small number of items and the short

expressions used in the items caused the form to be practically applicable. In order to obtain a more functional form, score calculation was performed out of one hundred points. For this purpose, each item was transformed into a 6-point Likert form that can be scored between 0 and 5. In this way, the presenter could be assessed by a score between 0 and 5 for each statement, measuring different features. There are column totals displayed at the bottom of the form, where the user can easily calculate the scores, as well as sections where the grand total of the form can be calculated. Thus, presentation evaluations noted on the form will be calculated effectively, making the form more objective and functional for both the observers making the evaluations and the presenters being evaluated. Hence, besides being an objective evaluation inventory for the observer, it also provides the relevant information concerning the expectations from the presenters and the evaluation criteria. In this context, it is thought that the study is important as it will contribute to both the literature and the educators.

CONCLUSION

Kanbay form which was developed to evaluate students' presentations in educational programs in an objective and scientific way, was concluded to be statistically valid and reliable.

Conflict of Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Author Contributions

Plan, design: YK, HSS, AA, SÇÖ, MF; **Material, methods and data collection**: YK, AA; **Data analysis and comments:** YK; **Writing and corrections:** YK, HSS, AA, SÇÖ, MF.

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