

## **The Validity and Reliability Study of the Self-Efficacy Scale of Musical Individual Performance**

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### **Abstract**

*This study aims at developing a self-efficacy scale for individual performance. After reviewing the literature in this field, experts' opinions have been considered and a test data pool consisting of 17 items has been formed. This scale has been read by thirty four students and its comprehensibility has been checked. The scale was organized in the form of 5 point likert scale with the expressions of "Never", "Rarely", "Not sure", "Sometimes", "Always". This test form for the measurement of individual performance has been applied to 230 music teacher candidates at the age of 18-22 and above and who have taken an instrument course for at least 1 year. In order to obtain proofs for the validity of the scale, first basic components analysis and then explanatory factor analysis have been performed. As a result of the explanatory factor analysis, 3 items have been removed from 17 items and the total number of items has become 14. As a result of the reliability analysis of the whole scale, reliability coefficient has been found to be ,88. In conclusion, it has been detected that the self-efficacy scale is a valid and reliable instrument in measuring the self-efficacy of the music teaching students at the age of 18-22 and above in their individual performances.*

**Key words:** Music, Individual performance, develop self-efficacy scale

### **Introduction**

The self-efficacy is a concept developing by the time, with the experiences. People can develop their self-efficacy with the help of experience, observation or listening to various comments. The concept of the self may change for the person by the time and is unique to the areas in which the person has skills. In addition, external feedback has direct effect on the self-efficacy of the person.

In Bıkmaz's (2004) opinion, self-efficacy affects the objectives set for the people themselves, how much effort they can exert for achieving these objectives, how long they can face the problems they encounter for achieving these objectives and their reactions of failure.

According to Kirsch, there are two types of self-efficacy (Donald, 2003: 221; cit. Acar, 2007: 4). The first one is the perceived ability to perform a behavior in a certain area. This is called task self-efficacy. The task self-efficacy concept of the Kirsch is almost same with the self-efficacy concept mentioned in the social learning theory of Bandura. The second one is the performance demonstrated for overcoming the possible difficulties and this is called coping self-efficacy.

According to Bandura (1977), people with strong self-efficacy beliefs do not escape from the experiences when they face them and have to cope with them for the first time and they are very determined in completing their activities successfully. On the other hand, people with weak self-efficacy beliefs have emotions and experiences such as nervousness, stress, sooner or later displeasure in comparison to people with strong self-efficacy. Bandura defines the self-efficacy beliefs as "the belief of the individual in his capacity for successful realization of the organizing the necessary activity or action for demonstrating a certain performance". Bandura (1997) expresses that people with strong self-efficacy beliefs do not escape from the experiences when they face them and have to cope with them for the first time and they are very determined in completing their activities successfully.

In their studies, Brouwers and Tomic (2002) tried to develop a “teacher interpersonal self-efficacy scale” for measuring the self-efficacy of the teachers on interpersonal level and specified their study in two parts as teaching activities; people that the teachers are in interaction with (students, other teachers and school directors) and the purposes laying under the interaction of the teachers with others. After that point, the researchers formed the teacher interpersonal self-efficacy scale by including the following three activities. These are (a) managing the student behavior in the class, (b) gaining the support of other teachers, (c) gaining the support of school directors.

Sharp (2002) emphasizes that the motivation, welfare and personal success of the person form the base of a person’s self-efficacy. Because if a person does not believe that his actions will not bear the desired results, this person becomes unwilling in coping with difficulties and reacting. Zimmerman (2000) emphasizes that self-efficacy belief is sensitive to students’ communication with the learning methods that are personally disciplined to the detailed differences in terms of performance and to the mediation of the students’ academic success. In other words, performance changes, learning methods, and academic success affect the self-efficacy belief (Cit. Akbulut, 2006: 24-33).

In the activity of managing the student behaviors, items developed by Emmer and Hickman (1991) have been used in measuring the perceived self-efficacy of the teachers and the sub level created with these items has been called “perceived teacher self-efficacy in class management”.

In Turkey the literature in this field concerning the studies for evaluation of the self- efficacy or self-confidence of the individuals are quite limited (Diken, 2004). However, although there is a noticeable increase in the studies conducted in this area, it is not possible to state that this sum of study is enough. On the other hand, although there are significant shortcomings in measuring tools for the self-efficacy concerning the performance, recently developing scales for special cases concerning this variable and studies for adapting the scales have gained momentum (Bikmaz, 2004).

According to the scientific research, people tend to stay away from the tasks and situations for which they feel they are not enough and can focus on activities and tasks which they believe they can cope with (Pintrich and Schunk 1996).

It is claimed that the success is related to many factors directly or indirectly. It is thought that emotional factors such as the attitude, self-efficacy, motivation, anxiety can affect the performances of the students and therefore their academic success. In artistic areas, the perception of self-efficacy gains importance particularly in applied experiences. Especially individual musical performance includes factors such as skill, experience, self-confidence, concentration, motivation and belief in success under self-efficacy perception. Acquiring individual performance self-efficacy perception depends on the unity of all these factors in balance and is a long and progressive process.

The students’ individual performance is a two-sided educator process that enables the recognition of characteristics of the students and also measures the effectiveness of the teachers’ pedagogical approaches. For the teacher who gets away from the students during their individual performance and becomes someone from the audience, the success of the education is a response in the individual characteristics and developments of the students.

Performance preparation must be directed towards acquiring characteristics such as concentration, auto control, meticulousness, artistic approach, responsibility to undertake duty and overall love for art apart from studies for dubbing of the art work.

During the whole performance preparation period, studies must be performed to that end. After every successful individual performance, students must develop self confidence and self trust, by developing their habit to concentrate they must acquire audio self control, by focusing on the upcoming parts they must ignore negative sides and develop a sense of responsibility and love of art (Andreeva, 1985, p.94-101).

It is seen that in measuring the self-efficacy and other similar characteristics such as self-confidence or self-esteem, equal ranged scales are used. Self-Esteem of Musical Ability (Schmitt, 1979), Self-Concept in Music Scale (Svengalis, 1978) and Self-confidence Scale in Musical Ability (Özmenteş, 2005) may be the examples for this type of scales.

Determining the self-efficacy beliefs in musical development that includes complex learning and performance processes, may be recognized as a latent variable in terms of achieving determined objectives of the music education. In music education, due to evaluations based on performance products, psychological and social psychological variables laying under these products may be missed. However, recently there is significant increase in the number of studies that reveals the possible interaction between these latent variables and performance products (McPherson and McCormick, 2006; Nielsen, 2004; McCormick and McPherson, 2003; Hallam, 2001; McPherson and Renwick, 2001; Barry, 1992). For example, McPherson and McCormick (2006) came to the conclusion that self-efficacy belief is the most important factor in instrument performance. Nielsen (2004) found out that the students with high self-efficacy belief use cognitive tactics more effectively in comparison to the students with low self-efficacy beliefs in studying for an instrument. McCormick and McPherson (2003) found out that self-efficacy belief is effective in instrument performance like other factors such as the motive and quality of the study (Cit. Özmenteş, 2005).

In our country, self-efficacy scales need to be developed or adapted in order to accelerate research in this area in terms of both quantity and quality. In this direction, the objective of the study is to conduct a study for validity and reliability of the self-efficacy scale concerning the individual performance. It is thought that this study is important as it is the first self-efficacy scale concerning individual performance.

## **Method**

### **Study Group**

The trial form has been applied to 230 music teacher candidates at the ages of 18-22 studying in Music Education Department of Education Faculties of Mehmet Akif Ersoy University, Pamukkale University and Gaziosmanpaşa University in 2012-2013 education year. The proportions of items in the scale and number of the participants are at the adequate level (Gorusch, 1983).

### **Writing the Expressions in the Scale and Prior Review**

At the first stage, relevant literature for measuring the individual musical performance has been reviewed for being able to write the expressions in the scale. Written expressions have been presented to the review of the experts in terms of scope, comprehensibility and similar expressions and then after necessary regularizations, the trial form consisting of 17 items has been formed.

In preparation of the trial form scaling approach (likert type scale) has been considered. In this frame, “Never”, “Rarely”, “Not sure”, “Sometimes”, “Never” has been the options in 5 point likert scale. The students have responded to the items of the scales at various levels ranging from “Always” (5) to “Never” (1).

A “directive” that provides information about objective of the scale, total number of expressions, response method and average response time and “personal information forms” which provides information about demographic characteristics (faculty, high school, class, gender, area of individual performance and how long the participant has been studying, grade point average) of the participants have been added to the trial form.

### **Processing the Data acquired from the Trail Application and Analysis**

The responses of the participants to the expressions in the trial form have been graded and input to the SPSS 15.0 program. Statistical analysis reflects the data of 230 students.

For structural validity, first of all rotated main components analysis has been used. Compliance of the data set with basic components analysis has been studied with the Kaiser-Meyer Olkin (KMO) co efficiency and Barlett Sphericity test. The main objective of the factor analysis is to lower down the number of variables that seem to have relations and summarize them in order to facilitate the comprehension and interpretation of the relations among many variables. In other words, it is a system that reduces the level and destroys the dependency structure like basic components analysis (Tatlidil, 1996). As understood, factor analysis has two main objectives (Özdamar, 2002). These are reducing the number of variables and presenting some new structures by making use of relations among the variables. Explanatory factor analysis is a technique that is used to produce less variables ( $k < p$ ) and independent new variables (factors) out of related  $p$  number of variables by making use of covariance or correlation matrix (Bayram, N. (2009), Büyüköztürk, Ş. (2007), Sipahi, B., Yurtkoru, E. S. & Çinko, M. (2006), Ural, A. & Kılıç, İ. (2006)).

## Findings

KMO value and Bartlett test have been used in order to check if factor analysis for *Individual Musical Performance Self-Efficacy Scale* can be conducted or not. The size of the sample has been accepted as enough for the application of factor analysis to *Individual Musical Performance Self-Efficacy Scale* as KMO value has been 0,924 and Bartlett test has been significant at the level of  $\alpha = 0,000$ . While KMO value tests the suitability of the question group for factor analysis, the values at the anti-image correlation matrix tests the suitability of each question for factor analysis. As there has been no item under the correlation values of 0,50 in the trial form, factor analysis has been conducted.

When eigenvalues of the factors that are bigger than 1 are considered for deciding the number of factors, scale two seems to be factorial. When eigenvalues and factor loadings for the unrotated results are considered, it can be claimed that the scale is two dimensional based on the difference between the first and the second eigenvalues.

As the items 4, 14 and 15 of *Individual Musical Performance Self-Efficacy Scale* have had factor loadings smaller than 0,30 and the ratio difference among them has been 0,10 and less, these have been left out of the analysis process and two dimensionality of the scale has been tested on 14 items.

When confirmatory factor analysis has been reviewed, it has been noticed that error index was not low enough and fit index was not high enough. Therefore, it has been thought that using rotated factor analysis results would be more suitable. Before using the rotation method, correlations among the factors have been reviewed for selecting what kind of a rotation method will be used and it has been found out that there is no relation between the factors and therefore it has been decided that Varimax vertical rotation method will be used.

*Rotated factor results 1:* As a result of Varimax rotation, items have been categorized under two factors. These factors explain %50,163 of the whole variance. The first factor explains 41,364 of the whole variance while the second %8,799. Total change (explained variance) of the whole scale has been %50,163 and this is considered to be enough for the researches conducted in social sciences (Bayram, 2009).

Anti-image correlation matrix values that analysis the suitability of all the items in the scale to the factor analysis change between 0,940 and 0,820. This proves that there is a high relation between scale items. As the factor loading values are between 0,714 and 0,284, it is accepted that the factor will be enough in explaining the power. Reliability co efficiency of the sub dimensions are 0,857 and 0,743 respectively and the overall reliability co efficiency is 0,88 and this may be a proof that the questionnaire has a high reliability co efficiency. Factor loadings of the items change between 948 and 892 for the first factor and 927 and 876 for the second factor.

The first dimension of *the Individual Musical Performance Self-Efficacy Scale* is consisted of 10 items and called "performance experience". The second dimension is consisted of 4 items and is called "performance self-confidence". As a result of the analysis, it has been understood that the final scale will have 2 dimensions and 14 items.

**Table 1. Factor Analysis of the Individual Musical Performance Self-Efficacy Scale**

NAME OF THE FACTOR	QUESTION	FACTOR LOADINGS	ANTI IMAGE CORRELATION	EXPLANATORINESS OF THE FACTOR (%)	RELIABILITY
Performance Dimension	I consider my technical level in my field of individual performance to be enough (piano, violin, flute vb.)	,392	,948	41,364	,857
	I join to the selections for individual performance in concert activities.	,397	,908		
	The teacher of the area in which I am interested in supports me for individual performance.	,297	,820		
	In my individual performance, I am able to interpret the artwork I play correctly.	,607	,897		
	I think I am talented in individual performance.	,630	,892		
	I can impress the audience with my individual performance.	,505	,889		
	I have enough stage knowledge (entrance/exit from the stage, greeting etc) for performing individually.	,353	,939		
	I know what kind of a performance preparation I need to follow for individual performance.	,619	,927		
	My of studying for the individual performance area is enough.	,581	,850		
	I continue to play the artwork even if I make a mistake during the individual performance.	,367	,892		
Psychological Dimension	An unsuccessful individual performance is not an obstacle for me to perform again.	,284	,927	8,799	,743
	The excitement on stage is a factor that enables me to focus better on the performance.	,612	,912		
	My self-confident for individual performance is enough.	,714	,905		
	I know how to cope with the excitement on the stage.	,666	,876		
TOTAL EXPLAINED VARIANCE: 50,163 KMO Scale Validity: 0,901 Bartlett Sphericity Test Chi-square: 1223,425 Sd: 91 P: ,001 Overall Reliability: ,880					

### **Conclusion and Recommendations**

Performance studies constitute an important place in music education. Therefore, determining the performance self-efficacy of the student is directly related to their development in their fields.

In this study, it has been concluded that individual performance self-efficacy scale can be used as a valid and reliable tool for measuring.

It is thought that

- This scale can be beneficial as it enables the analysis of self-efficacy concerning individual performance in scope of various variables in national and international studies;
- Such scales can contribute to the detection of individuals with low individual performance self-efficacy and to the studies for strengthening their trust in themselves.;
- This scale is especially important as individuals with high individual performance self-efficacy can be directed towards this area and supported.

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