

Adaptation of Edwin Gordon’s Primary and Intermediate Measures of Music Audiation Test to Turkish and Validity Reliability Study

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ABSTRACT

Musical perception is a fundamental of music teaching. Even if it’s considered as a field concerning institutions providing vocational musical education, it takes a part in every person’s life even consciously or unconsciously. Issue of choosing or determining individuals who has the talent on music is mostly faced at aptitude tests. Musical perception tests which has been developed with the developed technology as an alternative to conventional methods in order to use the time and energy efficiently has a great value.

This research aims the applicability of the Primary Measures of Music Audiation and Intermediate Measures of Music Audiation tests in Turkey, which was developed by Edwin Gordon, after performing the validity and reliability. Thus, it aims to be an alternative to the tests used in Turkey for measuring the musical perception or musical talent. In line with this objective, applications were performed in two separate school and level which were Azmi Ertuğrul Primary School and Turgut Özal Intermediate School. Applications were done in accordance with the original test and within a class hour. Each test is divided into two subtests such as tonal and rhythm test, including 40 items.

As a result, applicability of these tests in Turkey, after calculating KR-20 reliability coefficient, relationship against scores, material distinctiveness, material analysis, descriptive analysis, criterion validity and validity of these tests which have application examples in abroad, Primary Music Audition Test for 6-10 age group, Intermediate Music Audition Test for 11-14 age group were found to be successful in recognition of students who are talented or not and also the applicability of such in Turkey.

Keywords: Edwin Gordon, musical perception, PMMA, IMMA, special ability in music

INTRODUCTION

Music education is basically the process of gaining a musical behavior, changing a musical behavior or creating a musical behavior, developing a musical behavior. In this process, the individual’s own musical life (child/young, student) is taken as the basis, and a planned, regular and methodical path is followed in line with certain purposes, and certain goals are achieved in this way. Through music education, it is expected that the communication and interaction between the individual and his/her environment, especially the musical environment, will be healthier, more regular, more effective and more efficient. (Uçan, 2005: 14).

On the other hand, music education strengthens the development of cognitive skills such as how to use symbols, analyzing, synthesizing and evaluating information, as well as the development of academic and personal skills such as critical thinking, problem solving and learning how to work collaboratively for these purposes (Şendurur ve Akgül Barış, 2002: 167).

Although music education is actually a whole in our country, it is divided into various branches and branches within each branch. Because, music education varies within itself in terms of the basic behavior and content covered, the tools and equipment used, the method and technique followed, the environment and level performed, the anticipated stage and duration, and is named differently depending on each type. In this respect, it is possible

to divide music education into three main types as general music education, volunteer music education and vocational music education. General music education is a type of music education aimed at everyone at all levels, at all stages, at all ages regardless of job-profession, school, department, branch and program type, and it provides the minimum-common general music culture necessary for a healthy and balanced life. General music education is valid and compulsory for everyone at all ages and at all levels. General music education, kindergarten and primary school by the classroom teacher; by the music teacher in secondary and high school; In the university, it is taught by a music lecturer. Volunteer music education is a type of music education aimed at those who are passionately interested, willing and prone to music or a certain branch of music, aiming to provide an effective musical participation, pleasure and satisfaction and to acquire the necessary musical behaviors in order to maintain and develop this as much as possible. Volunteer music education is optional, not compulsory for everyone at any level. Volunteer music education takes place in primary, secondary and high schools through educational music branch studies, instrumental and vocal ensembles, elective choir and orchestra lessons, and optional music activities. In universities, in addition to situations similar to these, it takes place through music studies carried out based on voluntary participation. Vocational music education is a type of music education aimed at people who choose or want to choose the whole of the music field, a branch or branch, a job related to that whole branch or branch as a profession, and are talented in music at a certain level, aiming to gain the musical behaviors and knowledge required by the job or profession. Vocational music education is usually carried out in formal education institutions or in environments similar to those in these institutions. Music artist education (composition education, voice acting/performing education), music science education, music teacher education, music technology education are the main branches of vocational music education (Uçan, 2005: 30-31-32-33).

The criterion that is expected or desired for individuals who are educated in all these branches of music is musical hearing ability. An individual's musical hearing ability can enable him/her to progress more quickly and comfortably in the field of education. Today, whether an individual is talented in music or not is determined by the degree of musical hearing ability. For this reason, one of the most important points of music education is the determination and development of musical hearing ability.

Musical hearing is the basic skill a musician needs. Musical hearing is used to recognize distinctive musical elements such as timbre, interval, chord, tonality, scale, seventh chords, dominant and rhythmic patterns. For this reason, musical hearing ability is of great importance for a musician's musicality. Thanks to this skill, it is possible to have musicality elements such as playing an instrument, understanding the music heard, resounding the read note in the mind, improvising and composing, communicating with other musicians and easily adapting (Yayla, 2006: 29).

In a broad sense, musical hearing is the ability to (correctly) perceive, recognize, remember, distinguish, decipher and analyze musical wholes, items, materials, properties and relationships that can be perceived by the sense of hearing (Uçan, 2005: 19).

Determining the musical hearing ability of the individual can be done by experts in line with their wishes. However, this situation is different for individuals who will choose music as a profession. Therefore, determining the musical hearing ability is the most important dimension of the aptitude tests at this stage. Musical hearing exams constitute an important part of the exam, both in terms of score and degree of difficulty, and that also greatly affects the result of the exam. Today, these exams are encountered in conservatories, Anatolian High School of Fine Arts and in the entrance exams of the Music Departments of universities.

In our country, the concept of measurement in music education is frequently encountered in determining the ability. This situation has a very important place in the exams of conservatories, fine arts high schools, universities or science and art centers. Today, when individuals with musical talent want to further their education professionally, they apply to these institutions and take special talent exams. Age groups and the content of the exam also vary according to the institution applied for.

Fine Arts Faculties - Music Teaching Departments

Examinations and selection and placement procedures for programs that require special abilities are carried out by higher education institutions. Applications to programs that require special abilities are made directly to the higher education institution to which the program is affiliated. Examination and evaluation procedures are carried out by the relevant higher education institution. (ÖSYS Kılavuzu, 2017: 26). In order to apply to any of the higher education institutions that require a special talent exam, the candidate must have obtained the score specified in the ÖSYS Guide. Those who want to study in the Painting and Sculpture departments of the Faculties of Fine Arts should apply directly to the relevant higher education institutions in order to determine their superior abilities. Evaluation and selection processes of these candidates are carried out by the commissions formed by the relevant rectors (ÖSYS Kılavuzu, 2017: 26).

The entrance aptitude tests of the music departments of the universities are held in one or two stages by the juries formed on the dates predetermined by each university. In one-stage exams, candidates are tested in musical hearing, playing and singing. As a result of the evaluation of their success in these fields, they are entitled to receive undergraduate education. The musical hearing questions asked to the candidate in the one-stage exams are not preliminary; the exam is about measuring the candidate's musical hearing ability. In the two-stage exams, in the first stage, candidates are pre-selected with only musical hearing questions. In the second stage exam, musical hearing questions of increased difficulty are asked. At this stage, candidates demonstrate their playing and singing skills, and the total score they get determines whether the candidate is successful or not (Atak Yayla ve Yayla, 2009: 1).

Anatolian High School of Fine Arts

Entrance special talent exams of Anatolian High School of Fine Arts are made through tests and performances prepared by the juries formed by the relevant institutions. Music aptitude exams in the field of music mostly consist of musical hearing-perception tests, and the exam includes tests and performances related to musical hearing-perception, musical singing and musical playing (Yağcı, 2009: 1).

Science and Art Centers (BİLSEM)

Science and art centers; They are special education institutions opened to provide support education to students who continue to formal education institutions and are diagnosed as having special talents in the fields of general mental ability, visual arts or musical talent, in order to improve their abilities and enable them to use their capacities at the highest level (Bilim Ve Sanat Merkezleri Öğrenci Tanılama Ve Yerleştirme Kılavuzu, 2018-2019: 6).

BİLSEMs are known in our country as the place where "special talented students" are trained. However, while students receive 30-40 hours of education per week in their regular schools according to their school level, they can only receive 6-10 hours of education per week in BİLSEM. These trainings are up to 2-4 lesson hours for each talent area, depending on the talent areas of the students (Kurnaz, 2014:5).

Student selection in Science and Art Centers is carried out in four stages: Teacher Trainings, Completing Observation Forms, Group Screening Application, Individual Evaluation (General Mental- Visual Arts- Music). Among these areas, general mental represents students who respond accurately and quickly to the questions asked, ask questions to learn a new topic, make unusual connections between unconnected ideas, and insist on completing the given tasks with a perfectionist attitude. Visual arts represent the field that expresses students who have the potential to produce original designs, who have active, fluent and wide imagination, plan the paintings using the appropriate proportions between the depths and parts, perceive objects and environments in detail and make different designs from various materials. Finally, music refers to students who perform at a high level aurally and rhythmically, who can remember and vocalize one or more sounds and complex musical sentences, who have a high level of desire to play an instrument and sing, and who have the potential to make a difference in music-related fields. represents the area. Student identification procedures are firstly done by filling in the observation forms of the students nominated according to their talent areas by the classroom teachers via the e-School Management Information System, then the students whose observation forms are filled are taken to the group screening application with a tablet computer, and finally the students who are successful in the group screening application are classified according to their talent areas. carried out on an individual basis. (Bilim Ve Sanat Merkezleri Öğrenci Tanılama Ve Yerleştirme Kılavuzu, 2018-2019: 6-7).

Conservatories

Since the conservatories contain many departments, each department conducts its own special talent exam. The conditions sought in the exams of these departments or the skills they expect from the students differ. Therefore, it is not correct to make a general comment on how the aptitude tests held in conservatories are conducted.

In our country, the basic dimensions of the entrance exams of music departments are musical hearing, playing and singing. All these stages last for days and hours. Both the fatigue of the teachers who take the exam during the day and the fact that the students stand up all day and experience the stress and excitement of the exam bring to mind the questions of whether these exams are measured correctly from time to time. Based on this problem, with the help of technology, it is possible to lighten the load on the teachers, to use and evaluate the time well, and to reduce the exam excitement of the students.

In this study, it was aimed to determine the usability in Turkey after the validity and reliability of the Primary Measures of Music Audiation (PMMA), which was developed by Edwin Gordon to determine the musical hearing ability. For this purpose, the research sought answers to the following problems and sub-problems:

How are the validity and reliability of Edwin Gordon's Primary Measures of Music Audiation and Intermediate Measures of Music Audiation?

1. What are the KR-20 reliability coefficients of Edwin Gordon's Primary Measures of Music Audiation?
2. How reliable is the Primary Measures of Music Audiation used to measure Edwin Gordon's general musical ability?
 - a) What are the descriptive findings of the Primary Measures of Music Audiation, which is used to measure general musical ability?
 - b) What is the item analysis of the Tonal subtest of the Primary Measures of Music Audiation, which is used to measure general musical ability?
 - c) How is the item analysis of the Rhythm subtest of the Primary Measures of Music Audiation used to measure general musical ability?
3. How valid is the Primary Measures of Music Audiation, which is used to measure Edwin Gordon's general musical ability?
 - a) What is the criterion validity of the Primary Measures of Music Audiation, which is used to measure Edwin Gordon's general musical ability?
4. What is the validity of the Intermediate Measures of Music Audiation, which is used to measure Edwin Gordon's general musical talent?
 - a) What is the criterion validity of the Intermediate Measures of Music Audiation, which is used to measure Edwin Gordon's general musical ability?
5. How reliable is the Intermediate Measures of Music Audiation, which is used to measure Edwin Gordon's general musical talent?
 - a) What are the descriptive findings of the Intermediate Measures of Music Audiation, which is used to measure general musical ability?
 - b) What is the item analysis of the Intermediate Measures of Music Audiation Tonal subtest, which is used to measure general musical ability?
 - c) How is the item analysis of the Intermediate Measures of Music Audiation Rhythm subtest used to measure general musical ability?
6. What is the relationship between the sub-dimensions of Edwin Gordon's Primary Measures of Music Audiation and Intermediate Measures of Music Audiation?

METHOD

Model of the Research

This research is aimed at determining the musical abilities of students studying in kindergarten, primary school and secondary school. For this purpose, this research is the adaptation of Primary Measures of Music Audiation and Intermediate Measures of Music Audiation tests developed by Edwin Gordon into Turkish.

Scale adaptation studies are studies aiming at the adaptation of scales developed in other cultures to different languages and cultures (Kılıçer ve Odabaşı, 2010: 154). Scale adaptation studies are not only the translation of the scale into another language and its use, but also its translation into another language and culture by defining its validity and reliability as a result of necessary procedures and analyzes (Biçer, 2019: 58).

Population and Sample

The population of this research consists of students studying in kindergarten and primary school affiliated to the Ministry of National Education in Ankara. The reason for choosing kindergarten and primary school as the universe in the research is that the test was prepared for certain classes and age groups. Purposive sampling method was used for the sampling of the study.

Purposive sampling is a probabilistic and non-random sampling approach. Purposeful sampling allows for in-depth research by selecting information-rich cases depending on the purpose of the study. The researcher tries to understand natural and social events or phenomena in the context of selected situations, and to explore and explain the relationships between them (Büyüköztürk vd, 2010: 89).

Data collection tool

In this study, the Primary Measures of Music Audiation and the Intermediate Measures of Music Audiation, developed by E. Edwin Gordon and adapted to Turkish by the researcher, were used as data collection tools. The tests are divided into two sub-dimensions as tonal and rhythm. There are 40 questions in each sub-dimension. In both the tonal and rhythm subtests of both tests, students are asked to indicate whether the musical statements they listen to are the same or different from each other. The question distribution of the tests is as follows:

Table 1: Primary Measures of Music Audiation and Intermediate Measures of Music Audiation Question Contents

	<i>Question Contents</i>	<i>Primary Measures of Music Audiation</i>	<i>Intermediate Measures of Music Audiation</i>
<i>Tonal Subtest</i>	2 Tone*	✓	
	3 Tone*	✓	✓
	4 Tone*	✓	
	5 Tone*	✓	
	Chromatic Scale (Descending-Ascending)	✓	
	Triton	✓	✓
	Unison	✓	
	Minor 2	✓	✓
	Major 2		✓
	Minor 3	✓	
	Major 3	✓	✓
	Perfect 4	✓	✓
	Perfect 5	✓	✓
	Minor 6	✓	✓
	Major 6		✓
	Minor 7		
	Major 7		
	Octave	✓	✓
	Major Chord**	✓	✓
Minor Chord**	✓	✓	
<i>Rhythm Subtest</i>	Simple Scale	✓	✓
	Compound Scale	✓	✓
	Odd Meter***	✓	✓
	Syncope	✓	✓
	Triole	✓	✓
	Quintuplet	✓	✓
	Heptalogy		✓

* Voice questions 2,3,4 and 5 were played melodic¹, not harmonic².

** Only C Major and C Minor tones are used as tonality.

*** The syncopated rhythm questions are played unstressed.

¹ Intervals are written and heard in two ways: Melodic and Harmonic. If the sounds that make up the interval are heard in succession, the **melodic** interval;

² **Harmonic** interval occurs when the sounds that make up the interval are heard at the same time (Yavuzoğlu, 2014, s.93).

In the study of adapting the Primary Measures of Music Audiation and Intermediate Measures of Music Audiation into Turkish, primarily the language adaptation was made. The test, which was first translated into Turkish by the researcher, was then translated into Turkish by translators. The test, which was then translated into Turkish, was checked by language experts. The recording phase of the language-controlled test was carried out in a professional studio and without any changes to the questions used in the original recording. Care was taken to ensure that the length of the directives in the test (waiting time between questions) was the same as the original.

Application of Data Collection Tool

In the research, the tests were administered to the students by the researcher herself and the instructions in the user manual of the tests were taken into account.

The application was applied to kindergarten, primary and secondary school students studying in the 2018-2019 academic year. During the application, smart boards in the classroom were used and an environment where students could easily listen to the questions was provided. The application was made within one lesson hour (40 minutes). Before starting the test, the researcher verbally explained to the students what to do, and the sample exercises in the test were performed together with both the researcher and the students. After making sure that the whole class understood the test, the actual application was started. No additional time was required during the application. In 40 minutes, the students answered a total of 80 questions, 40 in the tonal test and 40 in the rhythm test.

Statistical Analysis of Data

Within the scope of the research, some analysis techniques were applied to examine the validity and reliability of the measurement tool. In this direction, in order to determine the distinctiveness of the measurement tool in the 6-

10 age groups, the mean of the lower-upper group was compared with the independent sample t-test. The results obtained give information about the validity of the measurement tool. In order to determine the internal consistency of the measurement tool, the relationships between the scores obtained from the scale dimensions were examined by calculating the Pearson Correlation coefficients. KR-20 reliability coefficients were calculated to examine the reliability of the measurement tool in the 6-10 age group.

In line with the purpose of the research, independent sample t-test was used to compare the scores of students with and without musical talent from the measurement tool. Before the necessary analysis was applied, the distribution of the scores of the students in the 6-10 and 11-14 age groups from the measurement tool was examined. For this, the skewness and kurtosis coefficients were calculated. It was determined that the skewness and kurtosis coefficients of the obtained scores were in the range of ± 1 and the scores had a normal distribution (Tabachnick ve Fidell, 2006). Data were analyzed using SPSS 25.0. During the analysis process, the confidence interval was determined as 95% and $p < 0.05$ values were considered statistically significant.

These two tests differ in terms of age groups and difficulty levels of the questions in the test. The Primary Measures of Music Audiation are suitable for kindergarten, 1st, 2nd, and 3rd grade students, according to the American education system, and are for children aged 5-8 years. Intermediate Measures of Music Audiation are for 1st grade, 2nd grade, 3rd grade and 4th grade students and include children aged 6-9. Considering the education system in Turkey, age groups do not fully comply with the American education system. For this reason, by examining the contents and questions of the test, it was found appropriate to apply the test to students studying in kindergarten, primary school and secondary school, respectively.

Primary and Intermediate Measures of Music Audiation Criterion Scores

The mixed score percentiles for the Primary Measures of Music Audiation and the Intermediate Measures of Music Audiation are used for the purpose of identifying children with musical talent. Using the class registration form, the teacher will find that if a child achieves a composite score percentage of 80 percent or higher on Primary Measures of Music Audiation or the Intermediate Measures of Music Audiation, they can profit and contribute significantly from their private music activities. The mixed score percentile for the Primary Measures of Music Audiation and the Intermediate Measures of Music Audiation does not indicate which type of particular musical activity is best for the child or which instrument is most suitable for the child. Tonal, rhythmic and mixed scores of the Intermediate Measures of Music Audiation should be used to diagnose children with extremely high general musical ability. If a child in the class scores the raw score outlined below with a higher score on two or more tests, including the mixed score, he/she may be considered to have extremely high overall musical talent (Gordon, 1986: 668-69).

Table 2. Intermediate Measures of Music Audiation Criterion Scores

	Tonal	Rhythm	Composite
1st Grade	36	35	70
2nd Grade	37	36	72
3rd Grade	38	37	74
4th Grade	39	38	76

The best method for identifying and assessing a child's exceptionally high overall musical talent is to first look at his or her composite score. A child may be considered to have exceptionally high overall musical talent if his or her grade mixed score is the same as or higher than his or her class's raw score. Moreover, if the child achieves the mixed score criterion, he/she must also have achieved the raw score of the tonal test or the rhythm test, which is the same as the highest of the raw score criterion at his/her level. If a child only scores raw on the tonal test or rhythm test and does not get a mixed score that is the same as or higher than the benchmark raw score for the class, his or her overall musical talent should not be considered quite high. The following hierarchy of raw score norms can be used to distinguish subtly among children with generally fairly high musical abilities. For finer discrimination, the numerical values of the raw scores in each group can be compared (Gordon, 1986: 69-70).

The norm table above has been created for Intermediate Measures of Music Audiation only. Since the Beginner Music Hearing Tests were also used in this study, a similar norm table is needed. However, since such a norm table was not found in the test guide, a norm table was created for Primary Measures of Music Audiation based on the norm table for Intermediate Measures of Music Audiation.

Table 3. Primary Measures of Music Audiation Criterion Scores

	Tonal	Rhythm	Composite
Kindergarten (Level 1)	33	32	66
1st Grade (Level 2)	36	33	70
2nd Grade (Level 3)	38	36	73
3rd Grade (Level 4)	39	37	76

When the norm table of the Intermediate Measures of Music Audiation was examined, it was determined that the children with talent in music were in the 95% percentile. The table above was created by assuming that the same situation would be valid for the Primary Measures of Music Audiation. It is possible to consider children taking the Primary Measures of Music Audiation to have extremely high overall musical ability if they score the raw score outlined above with a higher score on two or more tests, including the composite score.

Limitation

This research is limited to the 2018- 2019 academic year in which Edwin Gordon's Primary Measures of Music Audiation and Intermediate Measures of Music Audiation were applied.

FINDINGS AND INTERPRETATION

Primary Measures of Music Audiation and Intermediate Measures of Music Audiation KR-20 Confidence Coefficients

For the reliability of the test within the scope of the research, "*How are the KR-20 reliability coefficients of Edwin Gordon's Primary Measures of Music Audiation? and what are the KR-20 reliability coefficients of Edwin Gordon's Intermediate Measures of Music Audiation?*" answers to the questions were sought. The findings regarding the reliability of the test are given in Table 4.

Table 4. Examining the Reliability of Tests

Age Group	Dimension	Number of Items	KR-20
6-10 years	Tonal	40	0,89
	Rhythm	40	0,81
	General	80	0,85
11-14 years	Tonal	40	0,60
	Rhythm	40	0,67
	General	80	0,73

When the table is examined, the KR-20 coefficients calculated for the tonal and rhythm tests and the test in general for the 6-10 age group were calculated as 0.89, 0.81 and 0.85, respectively. KR-20 coefficients calculated for the 11-14 age group for tonal, rhythm tests and the overall test were calculated as 0.60, 0.67 and 0.73, respectively. While it is desired that the internal consistency coefficient be greater than 0.70, it was stated that 0.50 and higher Cronbach Alpha values should also be taken into account (Kember, Biggs ve Leung, 2004: 270). As a result, it was understood that the reliability of the test based on internal consistency was sufficient in both age groups.

Comparison of the Scores Obtained from the Primary and Intermediate Measures of Music Audiation of Students with and Without Musical Talent

In order to determine the distinctiveness of the Primary and Intermediate Measures of Music Audiation, the scores of BİLSEM students, who are known to have musical talent, and normal students, were examined by comparing them (Table 5). The results obtained will give information about the success of the Primary and Intermediate Measures of Music Audiation in distinguishing students with and without musical talent.

Table 5. Comparison of the Scores Obtained from Primary and Intermediate Measures of Music Audiation of BİLSEM Students and Non-Students

Age Group	Variable	Group	N	\bar{X}	Ss	t	p
6-10 years	Tonal	BİLSEM student	26	37,77	1,58	8,94	0,00

	Regular Student	26	26,42	6,27			
Rhythm	BİLSEM student	26	34,46	2,49	10,37	0,00	
	Regular Student	26	24,12	4,44			
Total	BİLSEM student	26	72,23	3,34	11,18	0,00	
	Regular Student	26	50,54	9,32			
11-14 years	Tonal	BİLSEM student	23	38,70	1,40	8,32	0,00
		Regular Student	23	32,91	3,03		
	Rhythm	BİLSEM student	23	34,91	1,95	5,49	0,00
		Regular Student	23	31,17	2,62		
	Total	BİLSEM student	23	73,61	2,55	9,12	0,00
		Regular Student	23	64,09	4,31		

When the table is examined, it is understood that the scores obtained from the tonal and rhythm tests in both the 6-10 age group and the 11-14 age group show a significant difference according to the group ($p < 0,05$). The mean scores of BİLSEM students in both the 6-10 age group and the 11-14 age group were found to be significantly higher. The results indicate that the Primary and Intermediate Measures of Music Audiation are successful in distinguishing students with and without musical talent.

As a result, it has been understood that the adapted tests can be used to identify students with and without musical talent in both the 6-10 age group and the 11-14 age group.

Primary Measures of Music Audiation and Intermediate Measures of Music Audiation Reliability

As part of the reliability of the Primary Measures of Music Audiation and Intermediate Measures of Music Audiation used in the study, used to measure Edwin Gordon's general musical talent, "How are the descriptive findings of the Primary Measures of Music Audiation used to measure general musical talent? and what are the descriptive findings of the and Intermediate Measures of Music Audiation, which is used to measure general musical ability? answers to the questions were sought. The obtained results are given in Table 6.

Before the validity and reliability studies of the measurement tool were carried out, descriptive analyzes were performed on the total scores obtained from the scale. Before the descriptive analysis, it was investigated whether the extreme values that made the normal distribution difficult were included in the data set. According to the results obtained, five extreme values were determined both in the 6-10 age group and in the 11-14 age group. These values were removed from the data set. Descriptive statistics of the scores obtained from the measurement tool are given in Table 6. When the skewness and kurtosis values of the distributions are examined, it is understood that the tonal, rhythm and total scores are distributed very close to normal in both age groups.

Table 6. Descriptive Statistics of Scores Obtained from the Measurement Tool

Age Group	Measurement	Tonal	Rhythm	Total
6-10 years	Average	30,51	28,54	59,05
	Median	32,00	29,00	59,50
	Mode	33,00	35,00	57,00
	Standard Deviation	6,63	5,49	11,22
	Coefficient of Skewness	-0,84	-0,46	-0,59
	Coefficient of Kurtosis	0,10	-0,54	-0,21
	Minimum	12,00	14,00	28,00
	Maximum	40,00	37,00	77,00
11-14 years	Average	33,25	31,34	64,58
	Median	34,00	32,00	65,50

Mode	35	32	67
Standard Deviation	3,23	3,72	5,92
Coefficient of Skewness	-0,63	-0,72	-0,72
Coefficient of Kurtosis	0,36	0,56	0,75
Minimum	22	18	42
Maximum	40	39	77

Primary Measures of Music Audiation Tonal Subtest Item Analysis

As part of the reliability of Edwin Gordon's Primary Measures of Music Audiation used in the study, which covers the 6-10 age group and is used to measure general musical talent, "How is the item analysis of the Tonal subtest of the Primary Measures of Music Audiation used to measure general musical talent? The answer to the question has been sought. The obtained results are given in Table 7.

Item Analysis Results According to Sub-Group - Upper-Group Averages

When ranking from the highest score to the lowest score according to the scores obtained from the scale, the comparison of the average scores given to each item by the 27% groups taken from both ends of the order is item analysis (Tavşancıl, 2006). In the item analysis, the independent groups t-test was used because the upper and lower groups were independent from each other. The t-test results regarding the means of the items in the lower and upper groups were determined (Table 7).

Table 7. T-test Results Performed to Determine the Discrimination of the Tonal Subtest Items of the Primary Measures of Music Audiation in the 6-10 Age Group (Gr)

Age Group	Tonal Item Number	Group	N	Ss	p	Tonal Item Number	Ss	p	
6-10 years	a1	Upper Gr	53	1,00	0,00	a21	0,87	0,34	0,00
		Sub Gr	53	0,85	0,36		0,23	0,42	
	a2	Upper Gr	53	0,98	0,14	a22	1,00	0,00	0,01
		Sub Gr	53	0,49	0,50		0,87	0,34	
	a3	Upper Gr	53	0,94	0,23	a23	0,83	0,38	0,11
		Sub Gr	53	0,70	0,46		0,70	0,46	
	a4	Upper Gr	53	1,00	0,00	a24	0,64	0,48	0,00
		Sub Gr	53	0,51	0,50		0,17	0,38	
	a5	Upper Gr	53	0,96	0,19	a25	0,98	0,14	0,00
		Sub Gr	53	0,38	0,49		0,74	0,45	
	a6	Upper Gr	53	1,00	0,00	a26	0,85	0,36	0,00
		Sub Gr	53	0,53	0,50		0,26	0,45	
	a7	Upper Gr	53	0,92	0,27	a27	0,96	0,19	0,00
		Sub Gr	53	0,60	0,49		0,70	0,46	
	a8	Upper Gr	53	0,96	0,19	a28	0,98	0,14	0,00
		Sub Gr	53	0,47	0,50		0,64	0,48	
	a9	Upper Gr	53	0,94	0,23	a29	0,62	0,49	0,00
		Sub Gr	53	0,60	0,49		0,25	0,43	
	a10	Upper Gr	53	0,98	0,14	a30	1,00	0,00	0,00
		Sub Gr	53	0,49	0,50		0,51	0,50	
	a11	Upper Gr	53	0,92	0,27	a31	1,00	0,00	0,00
		Sub Gr	53	0,49	0,50		0,74	0,45	
	a12	Upper Gr	53	0,43	0,50	a32	0,89	0,32	0,00
		Sub Gr	53	0,40	0,49		0,70	0,32	
	a13	Upper Gr	53	0,98	0,14	a33	1,00	0,00	0,00
		Sub Gr	53	0,47	0,50		0,68	0,47	
	a14	Upper Gr	53	0,98	0,14	a34	1,00	0,00	0,00
		Sub Gr	53	0,66	0,48		0,62	0,49	
	a15	Upper Gr	53	0,94	0,23	a35	0,94	0,23	0,00
		Sub Gr	53	0,51	0,50		0,57	0,50	
	a16	Upper Gr	53	0,96	0,19	a36	0,98	0,14	0,00
		Sub Gr	53	0,81	0,39		0,42	0,50	

a17	Upper Gr	53	1,00	0,00	0,00	a37	1,00	0,00	0,00
	Sub Gr	53	0,79	0,41			0,60	0,49	
a18	Upper Gr	53	1,00	0,00	0,00	a38	0,91	0,30	0,00
	Sub Gr	53	0,77	0,42			0,36	0,48	
a19	Upper Gr	53	0,62	0,49	0,00	a39	1,00	0,00	0,00
	Sub Gr	53	0,25	0,43			0,64	0,48	
a20	Upper Gr	53	0,96	0,19	0,00	a40	0,98	0,14	0,00
	Sub Gr	53	0,75	0,43			0,57	0,50	

When the table is examined, it is understood that a large proportion of the tonal subtest items of the Primary Measures of Music Audiation in the 6-10 age group have significant discrimination. Only one item (a3) in the test does not have significant discrimination. When this question was examined, small doublets were used in the first tonal musical statement and a full quintuple interval was used in the second. There is no structural similarity in the two questions. For this reason, we can say that the reason why this problem does not have a distinctive feature is that the problem is not well understood. Primary Measures of Music Audiation Tonal subtest was generally successful in distinguishing between 6-10 year old students with and without musical talent.

Primary Measures of Music Audiation Rhythm Subtest Item Analysis

Within the scope of the reliability of Edwin Gordon's Primary Measures of Music Audiation used in the study, which covers the 6-10 age group and is used to measure general musical talent, an answer was sought to the question "How is the item analysis of the Primary Measures of Music Audiation Rhythm subtest used to measure general musical talent?". The obtained results are given in Table 8.

Table 8. T-test Results Performed to Determine the Discrimination of the Rhythm Subtest Items of Primary Measures of Music Audiation in the 6-10 Age Group (Gr)

Age Group	Rhythm Item Number	Group	N	Ss	p	Rhythm Item Number	Ss	p		
6-10 years	B1	Upper Gr	53	0,98	0,14	B21	0,15	0,36	0,04	
		Sub Gr	53	0,89	0,32		0,32	0,47		
	B2	Upper Gr	53	0,98	0,14	0,00	B22	1,00	0,00	0,00
		Sub Gr	53	0,68	0,47			0,58	0,50	
	B3	Upper Gr	53	1,00	0,00	0,00	B23	0,89	0,32	0,00
		Sub Gr	53	0,66	0,48			0,28	0,45	
	B4	Upper Gr	53	0,96	0,19	0,00	B24	0,92	0,27	0,00
		Sub Gr	53	0,70	0,46			0,62	0,49	
	B5	Upper Gr	53	0,85	0,36	0,01	B25	0,98	0,14	0,00
		Sub Gr	53	0,62	0,49			0,70	0,46	
	B6	Upper Gr	53	0,92	0,27	0,00	B26	0,96	0,19	0,00
		Sub Gr	53	0,58	0,50			0,58	0,50	
	B7	Upper Gr	53	0,87	0,34	0,00	B27	1,00	0,00	0,00
		Sub Gr	53	0,42	0,50			0,45	0,50	
	B8	Upper Gr	53	0,98	0,14	0,00	B28	0,91	0,30	0,00
		Sub Gr	53	0,53	0,50			0,55	0,50	
B9	Upper Gr	53	0,34	0,48	0,55	B29	0,06	0,23	0,02	
	Sub Gr	53	0,40	0,49			0,21	0,41		
B10	Upper Gr	53	0,81	0,39	0,01	B30	1,00	0,00	0,00	
	Sub Gr	53	0,57	0,50			0,64	0,48		
B11	Upper Gr	53	0,98	0,14	0,00	B31	0,98	0,14	0,00	
	Sub Gr	53	0,58	0,50			0,58	0,50		
B12	Upper Gr	53	0,98	0,14	0,00	B32	0,98	0,14	0,00	
	Sub Gr	53	0,72	0,45			0,62	0,49		
B13	Upper Gr	53	0,72	0,45	0,53	B33	0,98	0,14	0,00	
	Sub Gr	53	0,66	0,48			0,45	0,50		
B14	Upper Gr	53	0,98	0,14	0,00	B34	0,98	0,14	0,00	
	Sub Gr	53	0,57	0,50			0,62	0,49		
6-10 years	B15	Upper Gr	53	0,96	0,19	0,00	B35	0,98	0,14	0,00
		Sub Gr	53	0,53	0,50			0,40	0,49	
B16	Upper Gr	53	0,89	0,32	0,08	B36	0,91	0,30	0,00	
	Sub Gr	53	0,89	0,32			0,91	0,30		

	Sub Gr	53	0,75	0,43			0,68	0,47	
B17	Upper Gr	53	0,87	0,34	0,00	B37	0,91	0,30	0,00
	Sub Gr	53	0,26	0,45			0,42	0,50	
B18	Upper Gr	53	0,89	0,32	0,00	B38	0,94	0,23	0,00
	Sub Gr	53	0,58	0,50			0,47	0,50	
B19	Upper Gr	53	0,06	0,23	0,00	B39	0,98	0,14	0,00
	Sub Gr	53	0,38	0,49			0,42	0,50	
B20	Upper Gr	53	0,92	0,27	0,00	B40	0,92	0,27	0,00
	Sub Gr	53	0,53	0,50			0,40	0,49	

When the table is examined, it is understood that all of the rhythm subtest items of the Primary Measures of Music Audiation in the 6-10 age group have significant discrimination. Primary Measures of Music Audiation Rhythm subtest was found to be successful in distinguishing between 6-10 age group students with and without musical talent.

Validity of the Primary Measures of Music Audiation and the Intermediate Measures of Music Audiation

Within the scope of the validity of the Primary Measures of Music Audiation and the Intermediate Measures of Music Audiation used in the study to measure Edwin Gordon's general musical talent, the question "How is the criterion validity of Edwin Gordon's Primary Measures of Music Audiation, which covers the 6-10 age group and is used to measure general musical talent? and Edwin Gordon's Intermediate Measures of Music Audiation, which covers the 11-14 age group and is used to measure general musical talent, how is the criterion validity? answers to the questions were sought. The results obtained are given below.

In order to obtain the criterion validity of Edwin Gordon's Primary Measures of Music Audiation, which covers the 6-10 age group and is used to measure general musical talent, and Edwin Gordon's Intermediate Measures of Music Audiation, which covers the 11-14 age group and is used for the measurement of general musical talent, the test is primarily required. reviewed by field experts. In line with the feedback from the experts, it was stated that these tests were appropriate to be used in Turkey and adapted to Turkish, that tests to be used to determine musical talent were needed, and that the tests developed included the necessary steps to determine musical talent. In addition, considering the age groups of the students studying according to the education system in our country, it was decided that the tests were valid by stating that the tests could be applied.

In order to obtain the criterion validity of the Primary Measures of Music Audiation and the Intermediate Measures of Music Audiation, which are used to measure Edwin Gordon's general musical ability, covering the 6-10 age group and the 11-14 age group, an application was also made on gifted children selected in the field of music in BİLSEM. The reason why BİLSEM students were selected to ensure criterion validity in the study is to determine whether the test is effective in determining children who are talented in music. Considering the age group in which the tests are applied, students who have been diagnosed appear only in BİLSEM.

Since the percentile norm table (used for each application) prepared by Edwin Gordon for the evaluation of the test results is available, there was no need to create a new norm table. In order to ensure the criterion validity of the test, the results and comments of the application made in BİLSEM were made over the norm table in the test booklet.

According to the result obtained from the application of the Primary Measures of Music Audiation, the highest score that BİLSEM students got from the tonal subtest is 40, and the lowest score is 35. In the rhythm subtest, the highest score they got was 37, and the lowest score was 26. This shows that none of the students could complete the rhythm subtest.

Considering the scores of criteria created to identify talented students in music stated in the Method section, it is possible to make the following comments for BİLSEM results:

Of the 26 students who took the Primary Measures of Music Audiation, 12 could pass the 95% percentile and be considered talented in music. Of these 12 students, one is level 1, three are level 2, three are level 3 and five are level 4. When the results of BİLSEM students were evaluated in order to ensure the criterion validity of the Primary Measures of Music Audiation, it was determined that the students were generally successful in the **tonal** subtest and the **rhythm** subtest. However, it was concluded that the students were not successful enough in the **rhythm** subtest starting from the second level. Within the framework of this result, it can be said that the reason why the students are not successful enough in the rhythm subtest is that the questions cannot be understood and that the questions are played over a single voice affect the intelligibility negatively.

According to the result obtained from the application of the Intermediate Measures of Music Audiation, the highest score that BİLSEM students got from the tonal subtest is 40, and the lowest score is 36. In the rhythm subtest, the highest score they got was 38, and the lowest score was 32. This shows that none of the students could complete

the rhythm subtest. Considering the scores of criteria created to identify talented students in music stated in the Method section, it is possible to make the following comments for BİLSEM results:

Of the 23 students who took the Intermediate Measures of Music Audiation, 11 could pass the 95% percentile and be considered talented in music. Five of these 11 students are level 2, two are level 3 and four are level 4. The student who took the test at Level 1 could not enter the 95% percentile. When the results of BİLSEM students were evaluated in order to ensure the criterion validity of the Intermediate Measures of Music Audiation, it was determined that the students were generally successful in the tonal subtest and the rhythm subtest. However, it was concluded that the students were not successful enough in the rhythm subtest from the first level. It can be said that, as in the Primary Measures of Music Audiation, inability to understand the questions and playing the questions over a single voice affect the intelligibility negatively.

Intermediate Measures of Music Audiation Tonal Subtest Item Analysis

As part of the reliability of Edwin Gordon's Intermediate Measures of Music Audiation, which covers the 11-14 age group and is used to measure general musical talent, "How is the item analysis of the tonal subtest of the Intermediate Measures of Music Audiation used to measure general musical talent?" The answer to the question has been sought. The obtained results are given in Table 9.

Table 9. T-test Results Performed to Determine the Discrimination of the Tonal Subtest Items of Intermediate Measures of Music Audiation in the 11-14 Age Group (Gr)

Age Group	Tonal Item Number	Group	N	\bar{X}	Ss	t	p	Tonal Item Number	\bar{X}	Ss	t	p
11-14 years	a1	Upper Gr	118	0,98	0,13	5,21	0,00	a21	1,00	0,00	2,72	0,01
		Sub Gr	118	0,77	0,42							
	a2	Upper Gr	118	0,98	0,13	4,92	0,00	a22	0,98	0,13	4,00	0,00
		Sub Gr	118	0,79	0,41							
	a3	Upper Gr	118	0,99	0,09	3,19	0,00	a23	0,95	0,22	4,06	0,00
		Sub Gr	118	0,90	0,30							
	a4	Upper Gr	118	0,89	0,31	11,82	0,00	a24	1,00	0,00	4,74	0,00
		Sub Gr	118	0,29	0,45							
	a5	Upper Gr	118	0,98	0,13	4,47	0,00	a25	1,00	0,00	5,03	0,00
		Sub Gr	118	0,81	0,39							
	a6	Upper Gr	118	0,98	0,13	4,62	0,00	a26	1,00	0,00	4,89	0,00
		Sub Gr	118	0,81	0,40							
	a7	Upper Gr	118	0,94	0,24	7,05	0,00	a27	0,99	0,09	4,04	0,00
		Sub Gr	118	0,58	0,49							
	a8	Upper Gr	118	0,99	0,09	4,66	0,00	a28	0,59	0,49	3,74	0,00
		Sub Gr	118	0,82	0,38							
	a9	Upper Gr	118	1,00	0,00	2,50	0,01	a29	0,98	0,13	4,00	0,00
		Sub Gr	118	0,95	0,22							
	a10	Upper Gr	118	0,97	0,18	4,76	0,00	a30	0,99	0,09	6,98	0,00
		Sub Gr	118	0,76	0,43							
	a11	Upper Gr	118	0,96	0,20	2,17	0,03	a31	0,31	0,47	0,57	0,57
		Sub Gr	118	0,88	0,32							
	a12	Upper Gr	118	1,00	0,00	4,28	0,00	a32	0,94	0,24	6,75	0,00
		Sub Gr	118	0,86	0,34							
	a13	Upper Gr	118	0,97	0,16	8,46	0,00	a33	0,97	0,18	5,05	0,00
		Sub Gr	118	0,57	0,50							
	a14	Upper Gr	118	1,00	0,00	5,32	0,00	a34	0,99	0,09	5,54	0,00
		Sub Gr	118	0,81	0,40							
	a15	Upper Gr	118	0,93	0,25	4,75	0,00	a35	0,97	0,16	5,05	0,00
		Sub Gr	118	0,70	0,46							
	a16	Upper Gr	118	1,00	0,00	4,28	0,00	a36	0,94	0,24	4,26	0,00
		Sub Gr	118	0,86	0,34							
	a17	Upper Gr	118	0,98	0,13	2,98	0,00	a37	0,97	0,16	5,93	0,00

	Sub Gr	118	0,89	0,31				0,71	0,45		
a18	Upper Gr	118	1,00	0,00	2,28	0,02	a38	0,89	0,31	6,84	0,00
	Sub Gr	118	0,96	0,20				0,52	0,50		
a19	Upper Gr	118	0,98	0,13	2,98	0,00	a39	0,93	0,25	5,47	0,00
	Sub Gr	118	0,89	0,31				0,66	0,48		
a20	Upper Gr	118	0,38	0,49	1,37	0,17	a40	0,48	0,50	3,73	0,00
	Sub Gr	118	0,30	0,46				0,25	0,44		

When the table is examined, it is understood that a large proportion of the tonal subtest items of the Intermediate Measures of Music Audiation in the 11-14 age group have significant discrimination. Some items in the test (a20 and a31) do not have significant discrimination. When these questions were examined, it was seen that the first melody and the second melody were very close to each other and there were small interval changes in both questions.

Intermediate Measures of Music Audiation Rhythm Subtest Item Analysis

As part of the reliability of Edwin Gordon's Intermediate Measures of Music Audiation, which covers the 11-14 age group and is used to measure general musical talent, "How is the item analysis of the Intermediate Measures of Music Audiation Rhythm subtest used to measure general musical talent?" The answer to the question has been sought. The obtained results are given in Table 10.

Table 10. T-test Results Performed to Determine the Discrimination of the Rhythm Subtest Items of Intermediate Measures of Music Audiation in the 11-14 Age Group (Gr)

Age Group	Rhythm Item Number	Group	N	\bar{X}	Ss	t	p	Rhythm Item Number	\bar{X}	Ss	t	p
11-14 years	b1	Upper Gr	39	0,98	0,13	1,93	0,05	b21	0,89	0,31	8,70	0,00
		Sub Gr	39	0,93	0,25				0,42	0,50		
	b2	Upper Gr	39	0,96	0,20	5,04	0,00	b22	1,00	0,00	5,44	0,00
		Sub Gr	39	0,73	0,45				0,80	0,40		
	b3	Upper Gr	39	1,00	0,00	1,74	0,08	b23	0,91	0,29	5,17	0,00
		Sub Gr	39	0,97	0,16				0,64	0,48		
	b4	Upper Gr	39	0,99	0,09	3,18	0,00	b24	0,84	0,37	5,27	0,00
		Sub Gr	39	0,90	0,30				0,54	0,50		
	b5	Upper Gr	39	0,99	0,09	6,36	0,00	b25	1,00	0,00	4,26	0,00
		Sub Gr	39	0,72	0,45				0,87	0,34		
	b6	Upper Gr	39	0,90	0,30	7,30	0,00	b26	0,64	0,48	5,91	0,00
		Sub Gr	39	0,50	0,50				0,28	0,45		
	b7	Upper Gr	39	0,88	0,32	1,08	0,28	b27	0,43	0,50	0,19	0,85
		Sub Gr	39	0,83	0,38				0,42	0,50		
	b8	Upper Gr	39	0,91	0,29	8,18	0,00	b28	0,93	0,25	8,12	0,00
		Sub Gr	39	0,47	0,50				0,51	0,50		
	b9	Upper Gr	39	0,97	0,16	3,96	0,00	b29	0,83	0,38	1,56	0,12
		Sub Gr	39	0,82	0,38				0,75	0,44		
	b10	Upper Gr	39	0,96	0,20	4,45	0,00	b30	0,90	0,30	4,10	0,00
		Sub Gr	39	0,76	0,43				0,69	0,46		
	b11	Upper Gr	39	0,96	0,20	8,45	0,00	b31	0,89	0,31	9,05	0,00
		Sub Gr	39	0,54	0,50				0,40	0,49		
	b12	Upper Gr	39	1,00	0,00	4,86	0,00	b32	1,00	0,00	4,26	0,00
		Sub Gr	39	0,83	0,38				0,87	0,34		
	b13	Upper Gr	39	0,93	0,25	5,43	0,00	b33	0,93	0,25	5,72	0,00
		Sub Gr	39	0,66	0,47				0,65	0,48		
	b14	Upper Gr	39	0,84	0,37	4,56	0,00	b34	0,72	0,45	7,05	0,00
		Sub Gr	39	0,58	0,50				0,30	0,46		
	b15	Upper Gr	39	1,00	0,00	3,62	0,00	b35	0,32	0,47	-2,35	0,02
		Sub Gr	39	0,90	0,30				0,47	0,50		
	b16	Upper Gr	39	0,90	0,30	5,67	0,00	b36	0,97	0,16	4,12	0,00

	Sub Gr	39	0,60	0,49				0,82	0,39		
b17	Upper Gr	39	0,98	0,13	0,81	0,42	b37	0,72	0,45	6,07	0,00
	Sub Gr	39	0,97	0,18				0,35	0,48		
b18	Upper Gr	39	0,96	0,20	6,48	0,00	b38	0,97	0,18	3,97	0,00
	Sub Gr	39	0,65	0,48				0,81	0,40		
b19	Upper Gr	39	0,69	0,47	5,89	0,00	b39	0,95	0,22	6,66	0,00
	Sub Gr	39	0,33	0,47				0,62	0,49		
b20	Upper Gr	39	0,86	0,34	0,69	0,49	b40	0,97	0,16	4,73	0,00
	Sub Gr	39	0,83	0,38				0,78	0,41		

When the table is examined, it is understood that a large proportion of the rhythm subtest items of the Intermediate Measures of Music Audiation in the 11-14 age group have significant discrimination. Some items in the test (b1, b3, b7, b17, b20, b27 and b29) do not have significant discrimination. When these questions are examined in order; b1 is written in 7/8 measure and is played in the pattern 2+3+2 in the first and 3+2+2 in the second repetition; b3 Written in 6/8 measure pattern and in the second repetition there is syncope in rhythmic statement. It is thought that this may have made it difficult to distinguish the second rhythm pattern from the first; b7 is written in two different numbers of measures, but both statements consist of notes connected by syncopes. Therefore, it is considered difficult to distinguish the lengths of the two statements; b17 is written in two odd meter, but both motifs have syncope; b20 also has syncope; In b27, both rhythm patterns are written in the same measure number, but the difference is made by having syncope with very small note values, and in b29 it is written in odd meter and includes syncope. According to these results, we see that the questions with low distinctiveness are written incompletely, but as stated in the result of the criterion validity of both the Primary and Intermediate Measures of Music Audiation, the thought that the fact that the rhythm questions are not played with any accent or with an instrument negatively affects the intelligibility.

The Relationship Between the Sub-Dimensions of the Primary Measures of Music Audiation and Intermediate Measures of Music Audiation

Within the scope of the Primary and Intermediate Measures of Music Audiation used in the study to measure Edwin Gordon's general musical talent, "How is the relationship between the sub-dimensions of the Primary Measures of Music Audiation and Intermediate Measures of Music Audiation?" The answer to the question has been sought. The results obtained are given below.

Table 11. Coefficients of the Relationships between the Dimensions of Primary and Intermediate Measures of Music Audiation by Age Groups

Age Group	Variable	Tonal	Rhythm	Total
6-10 years	Tonal	1		
	Rhythm	,712**	1	
	Total	,939**	,910**	1
11-14 years	Tonal	1		
	Rhythm	,449**	1	
	Total	,827**	,873**	1

**p<0,01

When the table is examined, it is understood that there is a high level of positive and significant relationship between the scores obtained from the tonal and rhythm tests in the 6-10 age group ($r=0,712$; $p<0,01$). A high level of positive and significant correlation was found between tonal scores and total score ($r=0,939$; $p<0,01$) and between rhythm scores and total score ($r=0,910$; $p<0,01$).

In the 11-14 age group, there is a moderate positive and significant relationship between the scores obtained from the tonal and rhythm tests ($r=0,449$; $p<0,01$). A high level of positive and significant correlation was found between tonal scores and total score ($r=0,827$; $p<0,01$) and between rhythm scores and total score ($r=0,873$; $p<0,01$). The results obtained showed that the internal consistency of the Primary and Intermediate Measures of Music Audiation applied in both age groups was at a sufficient level.

CONCLUSION, SUGGESTION AND DISCUSSION

The KR-20 coefficients calculated for the tonal, rhythm tests and the overall test in the 6-10 age group were calculated as 0.89, 0.81 and 0.85, respectively. When we compare these results with the studies that have been done, there is a situation like this: In their application of the Primary Measures of Music Audiation, Yang concluded that first-year students in Taiwan scored significantly lower than the published norms on the tonal subtest and insignificantly lower on the rhythm subtests. In addition, Yang obtained two half-confidence coefficients ranging from 0.84 to 0.91 (Yang, 2002; Akt; Stamou et al., 2010:76). Holahan and Thomson (1981: 64) examined the Primary Measures of Music Audiation on English children and calculated the split-half reliability for the tonal subtest as 0.86 and 0.93 according to age groups. On the other hand, the two-half reliability coefficients ranged from 0.45 to 0.71 at the lowest. Gouzouasis found significant differences in rhythm sub-scores among groups of 5-year-old Canadian children of Chinese, East Indian, and West European ethnicity in the Primary Measures of Music Audiation tonal subtest scores. Gouzouasis calculated a high split-half reliability $r > 0.90$, for both the tonal and rhythm subtests for each subgroup. However, the author concluded that the use of the test was questionable in East Indian children who scored lower on content validity than in other groups (Gouzouasis, 1993; Akt; Stamou et al., 2010:76-77). Stamou, Schmidt, and Humphreys (2010: 79) calculated the split-half reliability in the tonal subtest between 0.77 and 0.88 according to age groups, in their adaptation study of the Primary Measures of Music Audiation in Greece. The rhythm subtest was calculated as 0.42 to 0.69 according to the same age groups. In this context, it is possible to say that the results of the application in Turkey and the studies conducted abroad show similar results. KR-20 coefficients calculated for the 11-14 age group for tonal, rhythm tests and the overall test were calculated as 0.60, 0.67 and 0.73, respectively. As a result, it was understood that the reliability of the tests based on internal consistency was at a sufficient level in both age groups.

Before the validity and reliability studies of the measurement tool were carried out, descriptive analyzes were performed on the total scores obtained from the scale. Before the descriptive analysis, it was investigated whether the extreme values that made the normal distribution difficult were included in the data set. According to the results obtained, five extreme values were determined both in the 6-10 age group and in the 11-14 age group. These values were removed from the data set. When the skewness and kurtosis values of the distributions were examined, it was concluded that the tonal, rhythm and total scores were distributed very close to normal in both age groups.

In the item analysis, the independent groups t-test was used because the upper and lower groups were independent from each other. Considering the t-test results of the averages of the items in the lower and upper groups; It is understood that a large proportion of the tonal subtest items of the Primary Measures of Music Audiation in the 6-10 age group have significant discrimination. Only one item (a3) in the test does not have significant discrimination. The tonal subtest of the the Primary Measures of Music Audiation was generally successful in distinguishing between the 6-10 age group students with and without musical talent. It is understood that all of the rhythm subtest items of the Primary Measures of Music Audiation in the 6-10 age group have significant discrimination. The rhythm subtest of the Primary Measures of Music Audiation was found to be successful in distinguishing between the 6-10 age group students with and without musical talent.

The criterion validity of Edwin Gordon's Primary Measures of Music Audiation, which covers the 6-10 age group and is used to measure general musical talent, and the Intermediate Measures of Music Audiation, which is used for the measurement of general musical talent, which covers the 11-14 age group, was first taken by field experts and the tests were used to determine musical talent. indicated that it contains the necessary steps. In addition, considering the age groups of the students studying according to the education system in our country, it was concluded that the tests were valid by stating that the tests could be applied by experts.

In order to obtain the criterion validity of Edwin Gordon's Primary Measures of Music Audiation, which covers the 6-10 age group and is used for the measurement of general musical talent, and the Intermediate Measures of Music Audiation, which is used for the measurement of general musical talent, which covers the 11-14 age group, special selected specialties in the field of music in BİLSEMs. The application was made on gifted children. According to the results obtained from the Primary Measures of Music Audiation, the highest score that BİLSEM students got from the tonal subtest is 40, and the lowest score is 35. In the rhythm subtest, the highest score they got was 37, and the lowest score was 26. According to the results obtained from the Intermediate Measures of Music Audiation, the highest score that BİLSEM students got from the tonal subtest is 40, and the lowest score is 36. In the rhythm subtest, the highest score they got was 38, and the lowest score was 32.

It is understood that a large proportion of the items in the tonal subtest of the Intermediate Measures of Music Audiation in the 11-14 age group have significant discrimination. Some items in the test (a20 and a31) do not have significant discrimination. It is understood that a large proportion of the items in the Intermediate Measures of

Music Audiation rhythm subtest in the 11-14 age group have significant discrimination. Some items in the test (b1, b3, b7, b17, b20, b27 and b29) do not have significant discrimination.

It is understood that there is a high level of positive and significant relationship between the scores obtained from the tonal and rhythm tests in the 6-10 age group in the Primary Measures of Music Audiation. A high level of positive and significant correlations were found between tonal scores and total scores, and between rhythm scores and total scores.

Intermediate Measures of Music Audiation in the 11-14 age group, there is a moderate positive and significant relationship between the scores obtained from the tonal and rhythm tests. A high level of positive and significant correlations were found between tonal scores and total scores, and between rhythm scores and total scores. The results obtained showed that the internal consistency of the Primary Measures of Music Audiation and the Intermediate Measures of Music Audiation applied in both age groups were at a sufficient level.

In order to determine the distinctiveness of the Primary Measures of Music Audiation and the Intermediate Measures of Music Audiation, the scores of BİLSEM students who are known to have musical talent were compared with the scores of normal students. As a result, it is understood that the scores obtained from the tonal and rhythm tests in both the 6-10 age group and the 11-14 age group show a significant difference according to the group. The mean scores of BİLSEM students in both the 6-10 age group and the 11-14 age group were found to be significantly higher. The results indicate that the Primary Measures of Music Audiation and the Intermediate Measures of Music Audiation are successful in distinguishing students with and without musical talent.

As a result, it has been understood that the adapted tests can be used to identify students with and without musical talent in both the 6-10 age group and the 11-14 age group.

SUGGESTIONS

1. Considering the item analysis results of both the Primary Measures of Music Audiation and the Intermediate Measures of Music Audiation tonal subtest; The distinctiveness of all questions was high. However, the fact that the application was made in Turkey creates the expectation that Turkish music elements will also be included in the questions. For this reason, it may be suggested to include modal questions in the tonal subtest of both tests in the use of the tests in Turkey.
2. Considering the item analysis results of both the Primary Measures of Music Audiation and the Intermediate Measures of Music Audiation Rhythm subtest; The majority of the questions were highly distinctive. However, considering the use of the tests in our country, it can be suggested to use the rhythm subtest recording with a rhythm instrument and to enrich the questions with lame rhythms. It is thought that it would be beneficial to change some questions or revise the questions, especially in order to obtain more effective or efficient results in the rhythm subtest of both tests.
3. With this study, it was concluded that these tests, which were adapted to Turkish, were successful in distinguishing talented students in music. For this reason, these tests can be used in aptitude tests that take days and hours today. Kurnaz (2014:12) stated that there are important problems in the diagnosis of gifted students in the primary school period and that the most important problem in this regard is our lack of up-to-date and highly reliable diagnostic tools unique to our own culture in our country. For this reason, considering the age group in which these tests, which are adapted in the field of music, are taken into account, it is thought that it would be appropriate to use them for diagnostic purposes, especially in BİLSEM exams. In addition to this, it can be used for pre-evaluation purposes (in terms of level) in institutions that provide vocational music education. Thus, it is thought that both the students and our teachers who administer the exam will make better use of their time.

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