An Investigation into the Advanced Measures of Music Audiation (AMMA) Scores Specific to First Year Undergraduate Performance Majors and First Year Undergraduate Music Education Majors

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Introduction

Each year, college bound high school seniors make the difficult decision over what their declared major will be for the subsequent two or four years. First year students at Westminster Choir College have all decided on first, a music emphasis, and then a specific major in music for their college career. This study focused on the majors of Performance and Music Education and whether or not musical aptitude plays a role in the decision making process of a first year undergraduate. Through the use of Gordon’s Advanced Measures of Music Audiation (AMMA) test, the investigators of this research study first aimed to discover if there is a trend in the AMMA scores of first year students at Westminster Choir College, regardless of major. The investigators sought to answer the question “In what way are the musical aptitudes of first year students at Westminster similar or different?” By determining the answer to this key question, the investigators will determine whether or not there is a trend among first year students. If scores are indeed similar, it may indicate musical aptitude has little influence on the choosing of a specific major.

In addition to choosing a music emphasis for collegiate study, students at Westminster Choir College must also choose a specific major. Two such majors offered are Performance and Music Education. AMMA scores may or not be similar of first year students in specific majors. The investigators sought the answer to the question “In what way are the musical aptitudes of music education majors similar or different and in what way are the musical aptitudes of performance majors similar or different?” If AMMA scores are indeed similar among those first
year students of a specific major, it may indicate a preference of major among those with specific AMMA scores.

The first two questions that the investigators attempted to answer give crucial information in deciphering the answer to the third research question “To what extent does your musical aptitude influence what major you chose?” This final question was investigated using the data gathered of the population as a whole and the data gathered specific to each major as well as personal responses from each of the participants. By answering the final question, the investigators attempted to discover if there was any correlation between a person’s chosen major and their musical aptitude. Factors other than musical aptitude may play a more significant role in the choosing of a specific major. Comparing the student responses coupled with their individual AMMA score and chosen major may or may not indicate a trend between the first year students on how important a student’s musical aptitude is in the decision of specific major.

Research on AMMA

Edwin Gordon developed the idea of Music Learning Theory, which examines the way in which individuals learn music. Gordon believes that one’s musical aptitude, the potential to learn, is highest before age eight or nine. Although one can learn music after age eight or nine, it will take considerably more time and effort. As a development in his Music Learning Theory, Gordon created the test *Advanced Measures of Music Audiation* (AMMA) to measure an individual’s musical aptitude. He later developed the *Primary and Intermediate Measures of Music Audiation* (PMMA and IMMA) to measure the musical aptitude of younger participants (McPherson, 69).

Gordon’s purpose in developing the Music Learning Theory was to teach students exactly what they needed to know and teach to their specific needs. For example, students with a high
musical aptitude are taught more advanced tonal and rhythmic material than students with an average musical aptitude, ensuring that everyone’s needs are being met and they benefit from their music education experience (http://www.giml.org/mlt_aptitude.php).

The *Advanced Measures of Music Audiation* test can be used in one of seven ways to provide an informed look at your students’ potential and needs. First, the AMMA is often used as a subset in the college entrance process. Second, the AMMA is used on music and non-music majors alike on a college level to assess who has the potential for high achievement in music. Third, the AMMA can be used to provide reasonable expectations for music and non-music majors. Fourth, the AMMA can be used to provide insight on how instruction should be adapted to meet the individual needs of a student based on one’s individual musical differences on a college-level classroom, ensemble, or private instruction. Fifth, the AMMA can be used to place college students in music classes particular to their musical needs so as to provide them with a beneficial environment. Sixth, the AMMA can be used to guide students in making career decisions. Seventh, the AMMA can be used to provide insight on how the instruction should be adapted to meet the individual needs of a student based on one’s individual musical differences on a high school-level classroom, ensemble, or private instruction (Gordon, 7-8).

Gordon first administrated the Advanced Measures of Musical Audiation in 1990, examining the correlation between AMMA scores and the participants’ ability to play an etude. Although this test did not take into account previous musical experience or academic achievement, Gordon found at .61-.82 correlation. In 1993 Schleuter used the AMMA to see if there was a connection between sight-reading and dictation scores with the AMMA results. Schleuter found a correlation between the AMMA Rhythmic subset and both sight-reading and dictation scores, and the AMMA tonal subset with dictation scores (Harrison 342).
We used Gordon’s *Advanced Measures of Music Audiation* to study four first-year Undergraduate Performance Majors at Westminster Choir College and four first-year Undergraduate Music Education Majors at Westminster Choir College, with the goal of examining the correlation between musical aptitude and choice of major, as well as reasons for choosing said major.

Gordon’s sixth example for the use of the AMMA supports our idea. We also found other previous studies that show some relation to our idea and/or our findings, in particular was Carole S. Harrison’s research study of non-music majors in music classes.

Harrison used the AMMA, as well as a questionnaire she created, to gauge the effects of participants precollege music experience and their sex. Harrison found that while sex made no difference on the scores and grades, an individual’s previous musical experience played a large part in his or her musical aptitude. While the theory grade was mostly based on written work, the AMMA is based on listening and pitch memory; therefore, those with previous musical experience scored higher on the AMMA (Harrison, 334-335).

Harrison’s testing procedure was similar to ours as we also administered the AMMA with a questionnaire to insight on the major of the participants were, and most importantly why they chose this. We found that all the students, no matter what their AMMA revealed about their musical aptitudes, felt they excelled in music, due to their past experiences, therefore leading them to their given major (Harrison, 339).

Procedures

The research study was titled “An Investigation into the Advanced Measures of Music Audiation (AMMA) Scores Specific to First Year Undergraduate Performance Majors and First Year Undergraduate Music Education Majors.” The first step in designing the study dealt with
the logistics. The investigators first decided where and when the AMMA test would be given. The “Martin Room” was reserved at two different times on the Westminster Choir College campus. The test was given on Thursday April 19, 2011, and Tuesday April 19, 2011, to first year undergraduate students. The participants of the study were chosen by personal invitation, based on the investigators knowledge of their major and year. The participants were chosen on their ability to meet the criteria of being either a first year undergraduate performance major at Westminster Choir College or a first year undergraduate Music Education major at Westminster Choir College and whether or not they were able to participate at the decided time. Initial inquiries to potential participants were sent via email and then followed up with subsequent dialogue concerning specific meeting times.

Prior to taking the AMMA test, the participants signed consent forms granting permission for the use of their data in the research study. The participants also completed a questionnaire that asked questions relevant to the investigators research and gathering of contact information. They were given ample time to both read and complete both forms. During this time, the participants could ask any questions they had concerning the logistics of the study and the questions on the questionnaire. The questions were as follows:

What is your name?
What year are you in school?
What is your major?
What personal factors do you feel made you choose that particular major?
Did you ever feel that you were “right” for your major due to your aptitude for music?
What is your email?
What is the best phone number to contact you?
At the conclusion of the questionnaire was written “NOTE: Your identity will never be revealed throughout the research study. This questionnaire serves as information for the researchers, should we need to contact you concerning the study.” After each participant completed the questionnaire, the forms were collected. Each participant was then assigned an ID number which they were then instructed to write on their answer sheet. The ID number of each participant was only known to one member of the investigative team. (The test itself was later graded by a member of the team that was not aware of each participant’s ID number in order to maintain anonymity) The AMMA test was then administered to the participants according to the AMMA guidelines.

Each participant was given the AMMA answer sheet and instruction to listen to the recording. The AMMA audio was streamed over the computer system. The participants listened to the instructions and then completed the test. At the conclusion of the AMMA test, the participants were thanked for their participation and given leave to go.

Over the few days following the final session of the AMMA test, the investigators began to organize data. One member of the team was assigned the task of grading the AMMA tests. The scores were collected. At this point, the team member was able to answer the first research question, which is “In what way are the musical aptitudes of first year students at Westminster similar or different?” The scores were analyzed to see if there was a steady average of scores. The scores were then analyzed in comparison with the individual majors. At this point, the second research question (“In what way are the musical aptitudes of music education majors similar or different and in what way are the musical aptitudes of performance majors similar or different?”) was able to be addressed. While one team member was analyzing the scores themselves, another team member looked specifically at the questionnaire answers. The
participant’s answers on the questionnaire were integral in understanding their motivations of choosing a particular major, specifically if musical aptitude had any relevant influence. The questionnaire answers were then analyzed in conjunction with the scores of the participant to see if there was any correlation. The findings were then looked at from various angles to determine if there was any relevant connection. The final research question (“To what extent does your musical aptitude influence what major you chose?”) was now able to be addressed. The culmination of the research resulted in a commentary on this particular research question. The knowledge gained will provide insight on future student enrollment.

Findings

During this research study, the AMMA test was administered to a total of eight first-year students in the entering class of Westminster Choir College of Rider University. There was an equal make-up of Performance majors and Music Education majors. Each participant was given a number at the very beginning of the study for anonymity. Figure 1.1 illustrates the make-up of the student participants.

<table>
<thead>
<tr>
<th>Subjects</th>
<th>Major</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student 1</td>
<td>Performance</td>
</tr>
<tr>
<td>Student 2</td>
<td>Music Education</td>
</tr>
<tr>
<td>Student 3</td>
<td>Performance</td>
</tr>
<tr>
<td>Student 4</td>
<td>Music Education</td>
</tr>
<tr>
<td>Student 5</td>
<td>Performance</td>
</tr>
<tr>
<td>Student 6</td>
<td>Performance</td>
</tr>
<tr>
<td>Student 7</td>
<td>Music Education</td>
</tr>
<tr>
<td>Student 8</td>
<td>Music Education</td>
</tr>
</tbody>
</table>

With an equal representation from both majors selected in the study, student participants then filled out a questionnaire providing information such as their personal factors that influenced their choice of major. The participants were also asked to comment on their musical aptitude and how they felt it fit their specific major.

In response to the question, “What personal factors do you feel made you choose that particular major?” there were a variety of responses. Responses from Music Education majors
included expressing their love for teaching, thinking they would be a good teacher, and quoting their past experience in teaching as reasons for choosing their major. One participant that is a Music Education major admitted that s/he does not believe that s/he would be a good teacher and thought Music Education was the practical choice. When asked if they felt their musical aptitude was well suited for their major, participants responses ranged from expressing their history in music as a means to show their aptitude, being good at music, and one participant responded with, “If I wasn’t good at it, I wouldn’t want to do it.”

Performance majors had more convincing examples for choosing their majors. Many of them cited their love of music. They couldn’t imagine doing anything else with their lives and that is why they chose to be a Performance major. There was one participant that chose Performance because s/he felt it would be the easiest Bachelors degree to earn that would help in her/his graduate studies. When asked about their musical aptitude and if it suited their major, only one participant claimed that they did not have a high musical aptitude. The participant claimed that s/he has to work very hard to learn notes and rhythms. The other participants feel that because they have been around music for so long, it comes naturally to them.

Immediately following completion of the questionnaire, the AMMA test was administered. The AMMA tests were evaluated in a variety of ways. First, the tests were evaluated with each of the four scoring masks provided with the exam to find the $T_1$, $T_2$, $R_1$, $R_2$ scores. With these scores, Gordon provides a method for finding the Tonal Raw Score and the Rhythm Raw Score. The results of the calculations can be seen in Figure 1.2.
Using the Raw Scores from both the tonal section and the rhythm section, the Combined Raw Score can then be found by adding the two. (Figure 1.3)
Without an understanding of what these scores mean, at first they seem very low considering that the Figure 1.2 has a maximum score of 40 and Figure 1.3 has a maximum score of 80. Using a typical grading scale, the highest score earned would be an 87.5%. Fortunately, that type of grading is not appropriate for these tests. The point of reference used to evaluate these tests is a comparison to the data that Gordon collected to publish the exam in 1989. The Raw Scores are compared to the charts provided by Gordon. There are three available comparisons: Music Major, Non-Music Major, and High School Students. Tests are compared using a percentile marking. Figure 1.4 depicts the exams from this study and their percentile markings compared to other college Music Majors. In some cases, the combined score puts them in a lower percentile than both their Tone and Rhythm scores. This is correct and is because the charts used for evaluation have a majority of students scoring higher in one area which has an affect on what the combined score means.
Conclusion

The data, after being collected, can now be used to answer the research questions guiding this study. These questions are:

“In what way are the musical aptitudes of first year students at Westminster similar or different?”

“In what way are the musical aptitudes of music education majors similar or different and in what way are the musical aptitudes of performance majors similar or different?”

“To what extent does your musical aptitude influence what major you chose?”

To begin, the data shows that there are a variety of musical aptitudes from the participants. Figure 1.2 shows the Raw Scores for both Tonal and Rhythm sections of the test. Generally speaking, all the scores are relatively close together. Student 4 and Student 8 are both at each extreme when it comes to Raw Scores, but most participants are close together. When added together, the Combined Raw Score seen in Figure 1.3 shows slightly more differentiation between participants with a range of 22.

The data, when seen in the Percentile chart in Figure 1.4 offers a closer look at what that range means. Student 4 for example is in the 8th Percentile in Tonal, while Student 8 is in the 83rd Percentile. These scores are compared with other Music Majors from Gordon’s original chart. It can be concluded, by looking at this chart, that there is a wide range of scores amongst first year students at Westminster. In all but six cases, Students 5 and 8 being the exceptions, the Rhythm Raw Score was the higher of the two scores. Collectively, it can be derived by these
samples that first year students at Westminster have a wide range of musical aptitudes and most likely have a higher aptitude for Rhythm than Tonal.

Figure 1.1 and Figure 1.4 can be used to compare musical aptitudes and majors. Using these charts, it can be seen that there is no relationship to musical aptitude and the different majors.

Music Education majors have the broadest range of musical aptitudes. Students 4 and 8 are both Music Education majors and represent the two extreme cases in the study. Compared with Students 2 and 7, both Music Education majors, it can be concluded that first year Music Education majors have a broad range of musical aptitudes.

Performance majors, as seen in the charts, are just as likely to have a broad range of musical aptitudes as Music Education majors. Although there is a smaller range between the two extremes for Performance majors, Student 3 in the 35th Percentile and Student 6 in the 65th Percentile, there is no significant correlation between the Performance major and musical aptitude.

By comparing both sets of data for each major, no relationship is evident between a certain range of musical aptitude and a particular major. Both majors are represented at all ends of the spectrum of aptitudes.

Looking at the data, there is no convincing evidence that musical aptitude plays any part in which major a student chooses. Both majors have a broad range of scores. The responses on the questionnaire that participants filled out before taking the exam provided insight into why each participant chose their major.

Music Education majors had a wide range of responses. Themes that were common included a love for teaching, love for music, and one that didn’t even think they wanted to be a
teacher. When compared with the data of their musical aptitudes, there is a wide range of scores. There is a relationship between so many different responses and the wide range of different aptitudes. With further study, a relationship might be able to be seen between specific reasons for going into Music Education and musical aptitude.

Performance majors had a slightly smaller range of scores and likewise, their responses for going into Performance were more similar. Many cited their love for music and that they could not imagine their lives in anything else. One participant did claim that s/he had no real interest in Performance, but thought it would be a good set up for a Graduate program in another field of music. The similar responses and smaller range of scores supports the theory that students with similar reasons for entering a major have similar musical aptitudes.

At the conclusion of the study, there are questions remaining and new questions that have formed due to what has been found in the data. Further research could explore the relationship between choosing a major in music and music aptitude. The study has ruled out any relationship between chosen major and musical aptitude, but the question remains whether there is a correlation between musical aptitude and the reasons behind choosing a major. A larger sample size would be required for a correlation to be seen, as well as a longer timeline for more data to be collected. This would allow the investigators to look at the correlation between musical aptitude, major, and success in that major to be studied. A comprehensive study done over time with a large sample size would provide the needed evidence to draw definitive conclusions about the relationship musical aptitude, selected major, reason for selecting major, and success in major.
Resources


