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## Music Teacher Education in Turkey and in the USA: Musical Aptitude and Attitude toward Teaching

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Education is a life-long process, but much of it takes place in schools. Since teachers are key figures in education, the quality of education is dependent upon the quality of teachers in the system, hinging again on the quality of teacher education. Because of this, researchers have conducted numerous studies on effective ways to train teachers.

Many advanced societies give importance to music education. These societies also pay attention to the training of music teachers. The majority of investigations have focused on various aspects of undergraduate music teacher education. There is a need to be sensitive to the interests and needs of undergraduate music education majors, as a step toward improving teacher education practices (Boardman, 1990). Verrastro and Leglar (1992) stressed that studies in undergraduate music teacher education attempt to predict professional effectiveness on the basis of personal qualities, academic standing, aptitude, or intellectual and musical competencies.

The study of music teacher education could provide a valuable look into one of the forces that has determined the influence of music education on different societies. Throughout the research literature, limited research has been reported on music teacher education across cultures. However, one recent research study seems to reinforce the possibility of cross-cultural application of teaching pedagogy (Price, Ogowa, & Arizumi, 1997). Another cross-cultural study was

conducted by Moore (1981). He asserted that "Comparative studies with educators in foreign countries lend added perspective in the search for prudent approaches to pedagogical time" (p. 62). Small (1977), in his book *Music-Society-Education*, emphasized the importance of cultural studies: "(...) other cultures have at least as great a store of experience and wisdom as ours (...) so one culture can never maintain that it has nothing to learn from the rest of mankind" (p. 219).

The purpose of the present study was to investigate music teacher education in Turkey and in the USA. The researchers compared musical aptitude and selected attitudes toward teaching between university music education majors in the two countries.

### **Methodology**

Carl Seashore's *Measures of Musical Talent* test was developed in 1919 as the first published test of music aptitude. Gordon's *Musical Aptitude Profile (MAP)* appeared in 1965. This test was originally intended for students in grades 4-12, but, Schleuter (1993) constructed a college version of MAP (CMAP) in 1978. In 1989, Gordon designed a music aptitude test, *Advanced Measures of Music Audiation (AMMA)*, specifically for use with college-age students. Musical aptitude studies by Gordon indicate that the meaning of the word "aptitude" and "achievement" can be easily confused. Gordon (1989) reported that music aptitude is a measure of a student's potential to achieve in music, whereas music achievement is a measure of what a student has learned.

Subjects for this study were drawn from university music education major populations in the Republic of Turkey and the United States. The two universities' music education departments examined were Uludağ University (UU) in Bursa, Turkey and Arizona State University (ASU) in Tempe, Arizona. The UU Music Education Department was chosen because one of the authors of this article is a research assistant at Uludağ University. The ASU School of Music was chosen because one of the authors is a professor of music education at that institution. In addition, the first author is a doctoral student in music education at Arizona State University.

We used three measurement instruments in this study. The first was Gordon's *Advanced Measures of Music Audiation (AMMA)*. The test's stimulus mode is 30 pairs of musical statements performed by a synthesizer and recorded on cassette tape. Listeners are asked to discriminate between statements in each pair: whether the items in the pair are the same or different tonally and the same or different rhythmically. The response mode is paper and pencil. The test is 20 minutes long and has high reliability ranging from .88 to .89 for the total test. Gordon reported two types of reliability coefficients for the AMMA: split-halves coefficient (tonal scores  $r = .84$ ; rhythm scores  $r = .85$ ; total scores  $r = .88$ ) and retest coefficient (tonal scores  $r = .86$ ; rhythm scores  $r = .87$ ; total scores  $r = .89$ ). The test consists of two sections - tonal aptitude and rhythm aptitude, which are summed for a total score. It is normed separately for college-age music majors and non-music majors. For the Turkish portion of the present study, the verbal English instructions were translated into Turkish on the cassette tape via a voice-over.

To measure subjects' attitudes toward teaching, we employed the *Minnesota Teacher Attitude Inventory (MTAI)*, an instrument first published in 1951. The inventory measures attitudes of teachers toward students. It consists of 150 attitude statements to which subjects respond. In the manual, inventory's authors stated that "the most direct use to which the MTAI can be put is in the selection of students for teacher preparation and the selection of teachers for teaching positions" (Cook, Leeds, & Callis, 1951, p. 3). During its development, the MTAI was found to discriminate between a group of teachers who, according to their supervisors, had poor rapport with their students, and a group with good rapport. One hundred superior and 100 inferior teachers were designated. Each selected teacher was asked to complete two "Tryout Forms" (A and B) in a few weeks interval. The items that discriminated between the two groups were determined. Correlations with three other criteria of teacher student rapport also validated the inventory. The inventory's reliability, as determined by its developers via the Pearson correlation split-half procedure with Spearman-Brown correction, was .89. The developers also determined that the inventory scores are not related to intelligence. For the Turkish portion of the present study, we employed an existing Turkish version of the inventory used widely in Turkey. Because the possible scores on the Minnesota inventory can range from -150 to +150, we added 150 points to every raw score to eliminate the negative numbers, which facilitated our statistical analysis and interpretation of the results.

The third and final instrument administered was a questionnaire developed by DiAnn L'Roy. This questionnaire was designed to investigate the development of occupational identity in undergraduate music education majors. In her pilot study, L'Roy tested the questionnaire on a group of thirty-five undergraduate

music education students. Minor changes in language and format were made to improve the clarity of instructions. Internal consistency of the questionnaire was established by correlating fourteen paired variables using the Pearson product moment coefficient to show the strength of relationship between each pair (L'Roy, 1983). L'Roy used chi-square analysis when appropriate as a test of differences between groups that were being compared on the basis of their responses to multiple variables. She also calculated a weighted score for selected variables. We used only a small portion of the data collected via this instrument. This instrument was also translated into Turkish. Before administering the AMMA, MTAI, and the questionnaire, one professor at each institution, both native Turkish speakers who are also fluent in English, confirmed the accuracy of the translations from English to Turkish.

We tested the Turkish subjects during the spring semester of 1998 and the American subjects during the spring semester of 1999. We collected complete sets of data from 42 Turkish subjects, all junior and senior level undergraduate music education majors. We collected data on 35 American subjects. They were sophomores, juniors, seniors, and post-graduate students seeking teacher certification in music. Because the American subject group included sophomores and graduate students and the Turkish group did not, we employed the Kruskal-Wallis non-parametric one-way analysis of variance test between subject levels in the American group only. The tests indicated that there were no statistically significant differences between the American sophomores, juniors, seniors, and graduate students on AMMA [tonal, (Kruskal-Wallis)  $H = .43$ ,  $df = 3$ ,  $p > .05$ ; rhythm,  $H = .49$ ,  $df = 3$ ,  $p > .05$ ; total,  $H = .57$ ,  $df = 3$ ,  $p > .05$ ], or on MTAI [MTAI, (Kruskal-Wallis)  $H = .13$ ,  $df = 3$ ,  $p > .05$ ]. Therefore, for the

remainder of the analysis, we treated all Turkish subjects as one group, and all American subjects as one group.

## Results

First, music aptitude scores were examined as measured by the Gordon musical aptitude test. The means for the total test, which is tonal and rhythm aptitude combined, were not significantly different between the male and female subjects ( $p > .05$ ). This was true for the tonal and rhythm sub-test means as well, which is in keeping with the research literature on gender differences in musical aptitude as measured by standardized tests.

Next, we tested for differences in musical aptitude between nationalities, with a multivariate analysis of variance test. Nationality was the independent variable, and tonal, rhythm, and total aptitude test scores the dependent variables. The Wilk's lambda coefficient (Wilks' Lambda = .883,  $p < .028$ ) for the three types of scores indicated a statistically significant higher mean for the Turkish group ( $M = 62.88$ ,  $SD = 5.27$ ) than for the American group ( $M = 58.71$ ,  $SD = 6.89$ ). The univariate analysis revealed significant differences for all three dependent variables (tonal raw score, rhythm raw score, and total raw score) by nationality in favor of the Turkish subjects.

Next, possible differences on MTAI were examined. Again, there was no significant difference between male and female subjects ( $p > .05$ ). However, there was a highly statistically significant difference in favor of the American subjects on MTAI ( $t = -7.096$ ,  $df = 1$ ,  $p < .0001$ ).

We then addressed relationships between MTAI and AMMA for the total subject sample. The Pearson correlation coefficients ranged from  $-.247$  to  $-.33$  between the attitude inventory and the tonal, rhythm, and total aptitude test scores. All three correlations are statistically significant (tonal  $r = -.330$ ,  $N = 74$ ,  $p < .001$ ; rhythm  $r = -.247$ ,  $N = 74$ ,  $p < .05$ ; total  $r = -.308$ ,  $N = 74$ ,  $p < .001$ ), indicating that these two variables are similar. Negative correlations show that the two variables are inverse in nature. For Turkish subjects alone, they were also negatively correlated, but the correlations did not reach statistical significance. The correlation neared zero for the American subjects.

Finally, we examined some responses on the questionnaire about the subjects' backgrounds and their current attitudes toward music education specifically. Thirty percent of the Turkish subjects indicated that they decided to go into music before the age of fourteen. The data seemed to suggest that the American subjects decided to major in music at an older age than fourteen. However, a chi-square analysis indicated that there is no significant difference between Turkish and American students in the age they decided to study music, although the difference was close to statistical significance at  $p = .067$  ( $\chi^2 = 8.76$ ,  $df = 1$ ).

Next, we examined influences on the subjects' decisions to major in music education, as the subjects themselves rated these influences. The influence most highly rated by the Turkish subjects ( $M = 2.95$ ) was that of their parents. By contrast, the American subjects ranked parental influence low. American subjects rated their experiences in school music programs and the influence of their school music teachers (Both  $M$ 's = 3.49) as the most important influences on their decision to major in music education. Turkish and American subjects were similar in their ratings of the influences of relatives other than parents and of

friends as having had little influence on their decision to major in music. A Spearman rank correlation test between the rankings of influences by the Turkish and American subjects indicates that the influences are not statistically similar in ranks between the two nationalities ( $\rho = .64, p > .05$ ). However, both Turkish and American students agreed that their other relatives and friends did not influence their decision to major in music education.

Through data gathered via questionnaire, broad professional goals for the field of music education were identified. Both Turkish and American students ranked "to give people a basic appreciation of music" as their first choice for an educational goal. None of the Turkish students chose "to provide entertainment for the community" on their rankings. However, a Spearman rank correlation was statistically significant ( $\rho = .78, p < .05$ ), which suggests that the Turkish and American students' ideas about the goals of music education are similar.

We also examined the attitudes of Turkish and American subjects toward various activities in music education. Subjects were asked to indicate which activities they considered "basic" to a good school music education program, as opposed to being optional. American subjects selected the following activities significantly more frequently (as measured by chi-square tests) than did their Turkish counterparts: (a) playing instruments ( $\chi^2 = 5.17, df = 1, p < .02$ ); (b) related arts ( $\chi^2 = 5.94, df = 1, p < .02$ ); (c) choral (jazz) ( $\chi^2 = 4.61, df = 1, p < .03$ ); (d) concert band ( $\chi^2 = 6.22, df = 1, p < .01$ ); (e) composition ( $\chi^2 = 7.19, df = 1, p < .01$ ); (f) private lessons ( $\chi^2 = 4.69, df = 1, p < .03$ ); (g) band (jazz) ( $\chi^2 = 7.85, df = 1, p < .01$ ). However, significant differences in favor of the Turkish subjects were found for the activities of Orff ( $\chi^2 = 6.03, df = 1, p < .01$ ) and Kodály ( $\chi^2 = 4.01, df = 1, p < .05$ ).

There were no significant differences by nationality for singing ( $\chi^2 = 2.33, df = 1, p < .13$ ); music appreciation ( $\chi^2 = .73, df = 1, p < .39$ ); music theory classes ( $\chi^2 = .49, df = 1, p < .49$ ); marching bands ( $\chi^2 = .17, df = 1, p < .68$ ); choral (traditional) ( $\chi^2 = .18, df = 1, p < .67$ ); humanities ( $\chi^2 = .38, df = 1, p < .54$ ); guitar classes ( $\chi^2 = .05, df = 1, p < .82$ ); general music classes ( $\chi^2 = 2.30, df = 1, p < .13$ ); comprehensive musicianship ( $\chi^2 = 1.94, df = 1, p < .16$ ); moving to music ( $\chi^2 = .42, df = 1, p < .52$ ); elementary music classes ( $\chi^2 = 1.60, df = 1, p < .20$ ); solo and ensemble ( $\chi^2 = .49, df = 1, p < .48$ ); contests and festivals ( $\chi^2 = .02, df = 1, p < .90$ ); piano classes ( $\chi^2 = .60, df = 1, p < .44$ ); or orchestra ( $\chi^2 = .18, df = 1, p < .67$ ).

### Discussion

Significant differences by nationality in the favor of Turkish subjects on the AMMA test might be explained by the easier access to higher education enjoyed by Americans. The percentage of American high school graduates who attend college is several times higher than that of Turkish high school graduates.

Another possible explanation is that both authors (one a Turkish national and the other has taught and observed in Turkish schools and one university) believe that the Turkish music education system, including schools and universities, emphasizes oral musical skills more than does the American system. The AMMA measures oral skills, not performance, which is emphasized in American schools and universities. The significant differences in emphasis on playing instruments in music education programs reported by the American subjects in this study, reinforces this idea.

Regardless of reasons, the Turkish sample in this study scored just above the 62<sup>nd</sup> percentile of the music major norm group, while the American subjects scored just under the 50th percentile. Interestingly, the Turkish mean raw score would place those subjects at about the 80<sup>th</sup> percentile of the (American) non-music major norming group. The American subjects would be at about the 70<sup>th</sup> percentile. Some might question whether these individuals are musically talented enough to teach music successfully.

One might speculate about cultural musical differences between the two nations as being factors in the significantly different musical aptitude test scores. One might think that the American subjects would hold an advantage on a test based on Western music. However, music schools in both Turkish and American universities emphasize western art music, not the more indigenous traditional Turkish or North American music.

The means on the musical aptitude test were significantly different between the two nationalities in this study, but the difference between means on the Minnesota attitude inventory were more dramatic. The difference was significant at the .0001 level in favor of the American subjects. Both groups scored in the positive numbers range (before the scores were adjusted), but both were low compared to published norms. It should be kept in mind that the norms are half a decade old, and are based on an American sample. Nevertheless, the Turkish subjects scored below the 10<sup>th</sup> percentile compared to university teacher education subjects majoring in "nonacademic" subjects, while the American subjects scored somewhat above the 10<sup>th</sup> percentile. At the present time, we have no explanation about why these music education students scored so low compared to the norming group. To date, music education researchers have not

used the Minnesota inventory extensively enough to produce useful comparative data with other subject matter fields.

Research shows that environment can play a part in determining attitudes, and that attitudes can be changed through learning. One American researcher (Epley, 1971) found significant pre-post attitudinal differences for music education students who had significant amounts of field experiences in the public schools during their undergraduate training versus those who did not. In the present study, we observed informally that the American subjects had had more field experiences than their Turkish counterparts. However, although the researcher in the earlier study just mentioned reported significant differences on two attitude inventories, he found no significant differences on the Minnesota inventory. Regardless, the research and pedagogical literature suggests that, among music teachers, attitudes eventually manifest themselves in observable teaching behaviors.

We also have no satisfactory explanations for the negative correlations we found between the Minnesota attitude inventory scores and musical aptitude scores in the Turkish sub-sample, or about why we found no significant correlations for the American sub-sample. These data would suggest that, for Turkish undergraduate music education majors, musical aptitude, as measured by the Gordon test, might be a negative predictor of effective teaching behaviors. However, the largest of the correlation coefficients ( $r = -.330$ ), although statistically significant, accounts for only about 11% of variance in attitude scores. Regardless, these results suggest that, at least for Turkish students, musical prowess might not translate into successful teaching behaviors.

Finally, the subjects' attitudes and perceptions toward other aspects of music education would justify further investigation. The fact that the Turkish subjects reported heavy parental influence and the American subjects reported more influence from school music experiences and teachers probably reflect cultural differences in family influences between the two nations.

The importance placed on Orff and Kodály techniques by the Turkish subjects is curious given the lack of emphasis on Orff and Kodály in that particular Turkish university, but it is not surprising that the American subjects emphasized jazz. The fact that not one Turkish subject deemed providing entertainment for the community as an important goal for school music programs and several American subjects did probably reflects the nature of American school music programs, with their emphasis on ensembles, including marching bands.

In general, other results tended to reflect current practice in the two countries with regard to goals for music education, including emphasis by American subjects on multi-arts classes, playing instruments, concert bands, and jazz groups. Similarly, there were no significant differences by nationality for singing, music theory, guitar classes, moving to music, piano instruction, orchestra, and the like. In other words, the subjects' stated goals seem to reflect their personal experiences. Given that, it is likely that both groups of subjects will attempt to recreate their own experiences for their students, resulting in conservative approaches to music education.

Clearly, there is a need for more cross-cultural research on music teacher education. Like many research studies, this one raised more questions than it answered. The low attitude toward teaching scores by music education majors in

both countries should be examined further for possible causes, as should the negative correlations between attitude toward teaching and musical aptitude in the Turkish sub-sample. Eventually, experimental studies should be employed that measure the extent to which various experiences can change music students' attitudes toward teaching.

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### **PART 3:**

### **EVALUATION – QUALITY, LEARNING AND ACCOUNTABILITY**