

대학급 클래스 피아노에서의 즉흥연주 Improvisation in Collegiate Class Piano

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Abstract The purpose of this research was to investigate an aural approach to improvisation in collegiate class piano. A total of 15 undergraduate students enrolled in their first year of class piano participated in the semester-long study. At the end of instruction, each student performed and improvised two tunes both vocally and instrumentally. Three independent judges rated recordings of student performances using rating scales designed to measure tonal, rhythm, expressive, and improvisation skills. Quantitative results showed that an aural approach to improvisation in collegiate class piano may have led to improved music achievement.

Key words: aural approach, improvisation, collegiate, class piano, pedagogy

초록 본 연구의 목적은 대학급 클래스 피아노에서 청각 접근법의 즉흥연주를 탐구하는 것이다. 총 15명의 대학생들이 일년차 클래스 피아노 수업에서 한 학기동안 연구에 참여하였다. 학기 후 각 학생은 두 개의 선율을 목소리와 피아노로 연주하고 즉흥연주 하였다. 세 명의 심사위원들이 화성, 리듬, 표현력, 즉흥연주 역량들을 측정하는 평가기준으로 학생 동영상들을 심사하였다. 정량적 분석에 의하면 청각 접근법의 즉흥연주가 대학급 클래스 피아노의 음악 성취를 향상시킬 수 있음을 보였다.

주제어: 청각 접근법, 즉흥연주, 대학급, 클래스 피아노, 페다고지

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I . Introduction

During an era of need for creativity and innovation, interest and application of improvisation are rising in the field of music education. More specifically, music education researchers suggest that an aural approach to instruction improves students' music achievement (Azzara, 2002a; Bluestine, 2000; Campbell, 2005). An aural comprehension of music through improvisation develops students' sense of tonality, meter, and style along with instrumental performance achievement. With an awareness of music aptitude—potential for music comprehension—teachers can understand students' individual differences when teaching and learning music (Azzara, 2002a; Bennett, 2005; Swanwick, 1999; Thurmond, 1982). Aural approaches incorporating improvisation have received increased attention in recent years, but most adult class piano curricula focus on technical advancement in lieu of creative music making through aural approach. There is a continuing need for music education research in the field of collegiate class piano.

Classical musicians such as Bach, Haydn, Mozart, Beethoven, Chopin, and Liszt were not only accomplished keyboard players, but also highly skilled improvisers (Badura-Skoda, 2003; Gould & Keaton, 2000; Komlós, 2003; Levin, 2003). For most keyboardists in the 16-18th century, improvisation was an essential part of being a musician. Ruiter-Feenstra (2011) wrote that, particularly for organists, improvisation was expected at most auditions and was practiced as regularly as repertoire (p. 2). In the 18th century, virtually all composers were performers and performers were composers. Today's gap between classical and popular music did not exist in the 18c, and both involved spontaneity within the musical language. Beginning in the middle of the 19th century, classical improvisation became less prominent in performance and teaching, resulting in an increased emphasis on technique and performing from notation.

Various music education researchers have emphasized the importance of improvisation in music curriculum, especially in the genre of jazz (Alexander, 2015; Azzara, 1992, 2002; Filsinger, 2012; Gordon, 2012; D. Hart, 2011; L. Hart, 2011; Marx, 2010; Snell & Azzara, 2015; Stringham, 2010). More recently, improvisation research studies have also gained growing interest in the field of creativity science (Beaty, 2015). However, compared to the number of research studies conducted with jazz musicians, considerably fewer studies exist that investigate improvisation in collegiate class piano settings with classical musicians. Furthermore, there are only handful studies that examine and describe beginning collegiate class piano settings in relation to music aptitude and an aural approach to improvisation.

With intent to improve pedagogy in collegiate class piano, the purpose of this research was to investigate an aural approach to improvisation in beginning class piano. Research questions were: (a) What is the improvisation achievement of beginning collegiate class piano students? and (b) What is the relationship between beginning collegiate class piano students' music aptitude and music achievement?

II. Literature Review

1. Audiation and Aural Approach

Gordon (2012) defined audiation as “the process of assimilating and comprehending music momentarily heard performed or heard sometime in the past” (p. 3). Audiation is the basis for both developmental and stabilized music aptitude as well as for music achievement (Gordon, 1989; p. 15). Researchers have described the process for beginning music instruction as analogous to instruction of language (Azzara, 2002b; Bluestine, 2000; Mills, 1973). Bluestine (2000) stated children should learn musical skills in the same order as they learn language skills: to hear and perform before they read and write. An aural approach is especially crucial in piano instruction. When playing the piano with notation, students may replicate what is on the page without musical comprehension (Kataoka, 1985). Azzara (2002) suggested that to provide context for performing from notation, musicianship and development of aural skills should be central to each lesson. With proper instruction, students learn to anticipate and predict sound before performing that sound on their instrument.

Learning repertoire by ear provides inspiration for creativity and improvisation. A rich repertoire lays a foundation for grouping pitches into meaningful patterns and phrases (Azzara, 2002b; Bennett, 2005; Swanwick, 1999). When notes are emphasized without a musical context, students' understanding of music is limited. Comprehension of music occurs when students group notes into patterns, patterns into phrases, and phrases into the context of the overall tonal and rhythmic form of the music (Gordon, 2012; p. 14). Campbell (2005) illustrated that teaching students to listen with comprehension has always been and will continue to be the core of the musical experience. An aural approach is a direct route to the full form of artistic expression.

2. Improvisation

The importance of improvisation in music education curricula has been recognized in the National Standards (Consortium of National Arts Education Associations, 1994) and the more recent National Core Arts Standards (State Education Agency Directors of Arts Education, 2014). The National Core Arts Standards included creativity as one of the artistic learning processes (create, perform, respond, connect) for all students. At the collegiate level, the College Music Society's (CMS) Report of the Task Force on the Undergraduate Music Major (2014) identified creativity, diversity, and integration as three key pillars in undergraduate music curriculum. CMS stated that improvisation and composition provide a strong basis for educating today's musicians in order to obtain these three key pillars (p. 2).

According to Azzara and Grunow (2006), key elements of improvisation encompass personalization, spontaneity, anticipation, prediction, interaction, and being in the moment. Students should be provided with opportunities to make music spontaneously in a meaningful way through improvisation. Beginning collegiate class piano students are typically developing a sense of tonality and meter, crafting an artistic expression and musicality, and mastering necessary executive skills. Through improvisation, students: (a) express themselves individually, (b) develop higher order thinking skill, and (c) develop a more comprehensive and intimate relationship with music—with and without notation (Azzara, 2002a). Numerous studies in pre-collegiate settings have reported that an aural approach to music curriculum can help both students and music teachers (Filsinger, 2012; Stringham, 2010).

Stringham (2010) examined 66 high school students' music achievement and personal perspectives to improvisation and composition in a non-auditioned woodwind, brass, and percussion ensemble. Students met daily for 40 minutes with additional 40-minute group lesson every six school days. At the end of instruction, all students improvised and composed, and eight students participated in a focus group. Stringham concluded that improvisation and composition are not merely enrichment tasks reserved for advanced students, but can serve as meaningful elements of a comprehensive music education.

Filsinger (2012) described experiences of six novice music teachers in an Improvisation Professional Development Workshop (IPDW). For eight weeks, participants learned to improvise following the model provided in *Developing Musicianship through Improvisation* (DMTI; Azzara & Grunow, 2006, 2010a, 2010b). Filsinger's participants agreed that improvisation is essential for learning music comprehensively and an experience that should be provided

for all students. Filsinger concluded, “Learning to improvise will ultimately result in well-rounded, complete musicians” (p. 151).

3. Collegiate Group Instruction

Research conducted in collegiate group settings have recorded positive effects of improvisation in participants’ musicianship and music achievement (Alexander, 2015; D. Hart, 2011; L. Hart 2011; Marx, 2010; Montano, 1983, Snell & Azzara, 2015). Marx (2010) and L. Hart (2011) incorporated improvisation in classical repertoire for collegiate applied studios. They aimed to improve instruction by designing curriculum and examining the relationship between improvisation and music achievement. Marx (2010) conducted an eight-week study for collegiate trumpet studio. During the study, six students developed improvisation skills from DMTI and performed the exposition from Haydn’s *Trumpet Concerto*. They also improvised a cadenza for the first movement, transcribed cadenzas, and composed original cadenzas within guidelines. At the end of instruction, students reported improvisation exercises as “singing through the horn” (p. 63) and expressed enthusiasm about learning to improvise.

L. Hart (2011) examined music teaching and learning through improvisation during an eight-week study for seven students in a collegiate horn studio. Students studied four orchestral excerpts by singing and playing: (a) the bass line of a harmonic progression, and (b) the orchestral parts accompanying the horn solo. Students also learned to sing and play common-tendency tones (voice-leading), and improvised rhythm, tonal, and melodic patterns to harmonic progressions. L. Hart reported students’ improvement in enjoyment and comprehension of orchestral excerpts.

Several researchers have investigated the effect of improvisation in collegiate group classes (Alexander, 2015; D. Hart, 2011; Montano, 1983; Snell & Azzara, 2015). Montano (1983) studied the effect of improvisation on rhythmic accuracy in sight reading achievement for 32 collegiate elementary group piano students. Both experimental and control groups received sight reading instruction once a week for six weeks. The experimental group participated in additional rhythm improvisation exercises. These rhythm exercises included various combinations of given meter, rhythm notation, texture, and pitch delineation. Montano concluded that the experimental group who had improvised showed significantly greater achievement in rhythmic sight reading than the control group.

D. Hart (2011) described improvisation achievement and personal perspectives of eight

collegiate non-jazz majors enrolled in a 14-week jazz improvisation class. Throughout the course, all participants performed and improvised, both vocally and instrumentally. At the end of instruction, interviews were administered to explore students' perception of achievement, practice habits, and anxiety. D. Hart found that improvisation had a positive overall effect on musicianship and music achievement, and that collegiate non-jazz majors were capable of engaging in meaningful improvisations.

Alexander (2015) examined intrinsic motivation in collegiate trumpet classes by inviting 16 participants to perform, improvise, compose, and teach. Participants in two classes met once a week for 50 minutes during a 14-week semester. Instructional materials were based on *Jump Right In: The Instrumental Series* (JRI; Grunow, Gordon, & Azzara, 2003), and DMTI. Alexander noted a "positive relationship between results of quantitative measures of intrinsic motivation and qualitative data related to motivation and self-determination" (p. 133). As a result of instruction, participants reported experiencing high satisfaction and achievement in both performance and teaching skills.

Snell and Azzara (2015) documented experiences of four collegiate musicians learning to improvise in a seven-week improvisation course. Participants were collegiate students with limited improvisation experience. Throughout the course, all students learned repertoire by ear, improvised, listened to and performed solo transcriptions by ear, composed melodies based on familiar tunes, created an arrangement, and engaged in seven skills for learning to improvise from DMTI. Snell and Azzara concluded that beyond intrinsic pedagogical merits of improvisation instruction, participants reported positive effect on personal musicianship and creativity.

III. Method

1. Participants and Design

Participants for this study were 15 freshmen music students enrolled in one section of a semester-long class piano course. All students attended two group piano classes per week for a total of 14 weeks during the semester. All students' stabilized music aptitude was measured prior to the study by administering *Advanced Measures of Music Audiation* (AMMA; Gordon, 1989). Instructional materials for the course were based on *Keyboard Musicianship: Piano for Adults* (Lyke et al., 2014) and *Developing Musicianship through Improvisation* (DMTI;

Azzara & Grunow, 2006, 2010a, 2010b).

2. Procedures

Participants in this study ($N = 15$) engaged in semester-long instruction with several improvisation assessments that were not used for course grading purposes. During the semester, students learned repertoire by ear from *Keyboard Musicianship: Piano for Adults* (Lyke et al., 2014) and DMTI. Azzara and Grunow offer a procedure for learning repertoire by ear similar to the process for learning a language. DMTI is a resource for internalization of melodies, inner voices, and bass lines according to appropriate harmonic function. Each unit presents six parts to teaching and learning: (a) repertoire by ear, (b) rhythm patterns and harmonic progressions, (c) improvising melodic phrases, (d) seven skills for improvisation, (e) reading and writing, and (f) learning example solos. Seven skills for improvisation were taught as in <Table 1>.

<Table 1> Seven skills for improvisation from *Developing Musicianship through Improvisation* (Azzara & Grunow, 2006)

Skill	Sing and perform from repertoire
1	Improvised rhythm patterns to the bass line.
2	Essential voice leading principles by ear.
3	Skill 2 to the harmonic progression.
4	Skill 3 with improvised rhythm patterns.
5	Improvised tonal patterns to the harmonic progression.
6	Improvised tonal and rhythm patterns to the harmonic progression.
7	Skill with decorations and embellishments.

In addition to DMTI repertoire, students were provided with folk and holiday tunes, and encouraged to learn and perform repertoire on their primary instrument or voice. Students were taught to sing first, improvise on their primary instrument or voice, and then transfer their skills to the piano. This aural approach to improvisation was prioritized for one quarter of the semester-long curriculum.

At the end of instruction, all students: (a) sang the melody of “Happy Birthday,” (b) improvised to “Happy Birthday” vocally, (c) played the melody of “Happy Birthday” in the right hand with appropriate chordal accompaniment in the left hand, and (d) improvised to

“Happy Birthday” in the right hand with appropriate chordal accompaniment in the left hand. Students then repeated this procedure with an unfamiliar researcher-composed tune as in Figure 1.



[Figure 1] Researcher-composed tune

Students were not given notation for “Happy Birthday,” as it was expected that they learn this tune as a part of course content. Students were given ample time to practice the unfamiliar researcher-composed tune until they felt comfortable singing and playing it.

Three independent judges rated video-recorded student performances using rating scales designed to measure tonal, rhythm, expressive, and improvisation skills. The rating scales have been found reliable and valid in previous research (Azzara, 1992; Filsinger, 2012; D. Hart, 2011; L. Hart, 2011; Marx, 2010; Stringham, 2010). Only the three selected judges assessed student performances.

3. Data Analysis

Descriptive statistics were calculated for *Advanced Measures of Music Audiation* (AMMA; Gordon, 1989), a stabilized music aptitude test. For vocal and piano performance music achievement of two tunes, following were calculated: (a) interjudge reliability coefficients from three independent judges, (b) descriptive statistics for each dimension and composite score, and (c) correlation coefficients for two tunes. Following correlation coefficients were calculated: (a) familiar tune and unfamiliar tune achievement, (b) vocal performance and piano performance achievement, and (c) music aptitude and music achievement.

IV. Results

1. Data Results

Quantitative data were gathered to answer two research questions: (a) What is the improvisation

achievement of beginning collegiate class piano students? and (b) What is the relationship between beginning collegiate class piano students’ music aptitude and music achievement?

Regardless of the study, all freshmen students at the institution were administered the *Advanced Measures of Music Audiation* (AMMA; Gordon 1989) upon matriculation. For this study, appropriate permission was granted to access study participants’ AMMA scores. Means and standard deviations for study participants and the national norms reported in the *Manual for the Advanced Measures of Music Audiation* (Gordon, 1989) are as in <Table 2>.

<Table 2> Comparison of sample and national scores for AMMA

	Mean		Standard deviation	
	*Sample	**National	*Sample	**National
Tonal	29.0	28.3	3.95	4.12
Rhythm	31.5	30.8	3.16	3.52
Composite	60.5	59.1	6.79	7.41

Note. *Sample $N = 15$. **National $N = 3,206$. National sample includes undergraduate and graduate music majors.

Study participants’ AMMA descriptive statistics of minimum scores, maximum scores, means, and standard deviations for tonal, rhythm, and composite dimensions are as in <Table 3>.

<Table 3> Descriptive statistics for AMMA

	Min	Max	Mean	Standard deviation
Tonal	22	35	29.0	3.95
Rhythm	26	36	31.5	3.16
Composite	49	69	60.5	6.79

Note. $N = 15$.

Participants’ vocal and piano improvisations to two tunes were recorded after instruction: “Happy Birthday” and an unfamiliar tune. Three judges independently rated the recorded performances using ratings scales designed to measure tonal, rhythm, expressive, and improvisation skills as example shown in Figure 2.

“Happy Birthday”: Singing

Tonal Rating Scale (continuous dimension, 0-5, Tonic/Subdominant/Dominant):
The student performs

1

first and/or last note correctly.

2

most patterns in one function correctly (tonic reference).

3

most patterns in one function (tonic reference) correctly, and some patterns in another function correctly.

4

all patterns in two functions correctly.

5

all tonic, subdominant, and dominant functions correctly.

Student #

Score

1

2

3

[Figure 2] Example of judging rating scale

The judges used six-point continuous tonal and rhythm rating scales, and six-point additive expressive and improvisation rating scales. Interjudge reliability (alpha coefficient) of the three judges for the two tunes are as in <Table 4>.

<Table 4> Interjudge reliability coefficients for “Happy Birthday” (T1) and researcher-composed tune (T2)

	Tonal	Rhythm	Expressive	Improvisation	Composite
T1	.930	.955	.952	.908	.969
T2	.889	.962	.900	.951	.974
T1 + T2	.938	.975	.963	.964	.983

Note. N = 15.

For improvisations of each tune, descriptive statistics of composite scores are as in <Table 5> and <Table 6>.

<Table 5> Descriptive statistics for “Happy Birthday” improvisation

	Min	Max	Mean	Standard deviation
Judge 1	13	37	25.7	7.15
Judge 2	11	40	30.1	8.10
Judge 3	13	40	31.5	8.28

Note. N = 15.

<Table 6> Descriptive statistics for researcher-composed tune improvisation

	Min	Max	Mean	Standard deviation
Judge 1	12	38	26.7	6.48
Judge 2	15	40	30.9	7.29
Judge 3	18	40	30.5	7.69

Note. N = 15.

Correlation coefficients for tonal, rhythm, expressive, improvisation, and composite scores of “Happy Birthday” and the researcher-composed tune are as in <Table 7>.

<Table 7> Correlation coefficients for “Happy Birthday” and researcher-composed tune

	Tonal	Rhythm	Expressive	Improvisation	Composite
Tonal		.917	.836	.790	.909
Rhythm			.949	.943	.991
Expressive				.938	.974
Improvisation					.964

Note. N = 15.

To describe the quantitative relationship between improvisation achievement of the familiar tune and the unfamiliar tune, correlation coefficient for “Happy Birthday” (familiar) and the researcher-composed tune (unfamiliar) was calculated for each student. The correlation coefficient for familiar and unfamiliar tune improvisation achievement was .765, significant at the 0.01 level. To describe the quantitative relationship between improvisation achievement of vocal performance and piano performance, correlation coefficient for vocal improvisation achievement and piano improvisation achievement was calculated for each student. The correlation coefficient for vocal and piano performance improvisation achievement was .604, significant at the 0.05 level. To better understand the relationship between singing and playing, improvisation achievement

results of all students' vocal with piano performances were calculated. The correlation coefficient for vocal performance and piano performance was .604, significant at the 0.05 level.

The second research question of this study was to examine the relationship between beginning piano students' music aptitude and music achievement. The correlation coefficient for music aptitude and music achievement was .332, with no significance.

2. Data Interpretations

Participants' ($N = 15$) AMMA mean scores were higher than the national norms and their standard deviations were smaller than the national norms. Homogeneity of participants at a selective collegiate music school, small range of scores, and small sample size are possible explanations for AMMA results. Interjudge reliability coefficients of the three judges were at or above .90 with exception of the researcher-composed tune—tonal dimension (.889). These high interjudge reliability coefficients demonstrated that the three judges' ratings were consistent. The researcher-composed tune—tonal dimension received the highest mean score and the smallest standard deviation, yet displayed the most variability between the three judges. This may be from judges' discrepancies in interpreting improvisation, which was discussed at the judges meeting yet still remained questionable during actual judging.

All participants improvised to two tunes, vocally and instrumentally. Combined judges' ratings calculated the tonal dimension with the highest mean (50.1) and smallest standard deviation (8.3), and the improvisation dimension with the lowest mean (38.9) and largest standard deviation (12.1). Each dimension (tonal, rhythm, expressive, improvisation) of this study's ratings scales demonstrated to be important for an accurate and comprehensive assessment of improvisation.

The researcher-composed tune received higher means and smaller standard deviations than "Happy Birthday." The minimum composite scores of "Happy Birthday" and the researcher-composed tune also revealed that lower achieving students scored higher on the researcher-composed tune. These results may be from participants feeling more at ease after improvising "Happy Birthday," and from participants claiming ownership of learning an unfamiliar researcher-composed tune. Judges' ratings were consistent between "Happy Birthday" (familiar tune) and the researcher-composed tune (unfamiliar tune); the composite correlation coefficient was .765, significant at the 0.01 level.

The minimum scores of vocal and piano performance were noteworthy as participants'

limited piano skills likely affected their piano performance achievement. The correlation coefficient for vocal performance and piano performance achievement was .604, significant at the 0.05 level. Although not as significant as the familiar and unfamiliar tune coefficient, vocal and piano performance correlation coefficient informed that participants' singing and performing remained moderately consistent. The correlation coefficient for music aptitude and music achievement was .332, with no significance. This low coefficient may be a result of small sample size and limited amount of instruction during the 14-week semester.

The correlation coefficients for "Happy Birthday" and the researcher-composed tune were at or above .90 with two exceptions: Tonal-Expressive (.836) and Tonal-Improvisation (.79). This may be due to beginning piano students' experience with tonal improvisation: they needed to pay extra attention to expressive and improvisation details. Consistent with previous research (Alexander, 2015; D. Hart, 2011; L. Hart, 2011; Marx, 2010; Snell & Azzara, 2015), high correlation coefficients calculated in this study affirm that an aural approach to improvisation in collegiate class piano may lead to improved music achievement.

V. Conclusion

The purpose of this research was to investigate an aural approach to improvisation in collegiate class piano. Research questions were: (a) What is the improvisation achievement of beginning collegiate class piano students? and (b) What is the relationship between beginning collegiate class piano students' music aptitude and music achievement?

Participants in this study ($N = 15$) attended two group piano classes per week during a 14-week semester of instruction. All participants' stabilized music aptitude scores were obtained from administration of *Advanced Measures of Music Audiation* (AMMA; Gordon, 1989) when they matriculated. Instructional materials for the course were based on *Keyboard Musicianship: Piano for Adults* (Lyke et al., 2014) and *Developing Musicianship through Improvisation* (DMTI; Azzara & Grunow, 2006, 2010a, 2010b). All students in the course, regardless of participation in the study, experienced the same repertoire and instruction throughout the semester. Students learned skills in technique, sight-reading, harmonization, composition, transposition, repertoire, and improvisation. The course was supplemented with folk and holiday tunes, and students were encouraged to learn and perform repertoire on their primary instrument or voice. Students were taught to sing first, improvise on their primary instrument

or voice, and then transfer these skills to the piano for all improvisations. Participants were identifiable to the researcher, but the researcher did not analyze or code performances and interviews until after semester grades were posted.

To measure (a) improvisation achievement and (b) the relationship between students' music aptitude and music achievement, all participants completed a final performance assessment in Week 14. Participants: (a) sang the melody of "Happy Birthday," (b) improvised to "Happy Birthday" vocally, (c) played the melody of "Happy Birthday" in the right hand with appropriate chordal accompaniment in the left hand, and (d) improvised to "Happy Birthday" in the right hand with appropriate chordal accompaniment in the left hand. Students then repeated this procedure with an unfamiliar researcher-composed tune. Three independent judges rated recorded student performances using rating scales designed to measure tonal, rhythm, expressive, and improvisation skills.

Descriptive statistics and split-halves reliability coefficients for *Advanced Measures of Music Audiation* (AMMA; Gordon, 1989) were calculated. For vocal and piano performance music achievement of "Happy Birthday" and the researcher-composed tune, following were calculated: (a) interjudge reliability coefficients from three independent judges, (b) descriptive statistics for each dimension and composite score, and (c) correlation coefficients for two tunes. Following correlations coefficients were calculated: (a) familiar tune and unfamiliar tune achievement, (b) vocal performance and piano performance achievement, and (c) music aptitude and music achievement.

Results and interpretations of quantitative data affirmed that an aural approach to improvisation in beginning collegiate class piano may have led to improved music achievement. Interjudge reliability coefficients of the three judges were at or above .90 with one exception. Combined judges' ratings revealed that each dimension (tonal, rhythm, expressive, improvisation) of this study's rating scales were important for a comprehensive assessment of improvisation. The composite correlation coefficient for "Happy Birthday" and the researcher-composed tune was .765, significant at the 0.01 level. The correlation coefficient for vocal and piano performance achievement remained moderately consistent at .604, significant at the 0.05 level. The correlation coefficients for "Happy Birthday" and the researcher-composed tune were at or above .90 with two exceptions.

The relationship between music aptitude and music achievement of participants indicated positive yet low correlation coefficient of .332. Participants' music aptitude mean scores were higher than the national norms and their standard deviations were smaller than the national

norms. The split-half reliability coefficients for tonal and rhythm dimensions of AMMA were lower than the national norms, but composite dimension was acceptable (.71). Homogeneity of participants from a selective collegiate music school and small sample size may explain these results.

The importance of improvisation in music education was recognized in the National Standards (1994) and re-emphasized in the most recent National Core Arts Standards (2014). For collegiate level curriculum, the College Music Society (2014) recommended improvisation and composition for developing three key pillars of creativity, diversity, and integration. Despite emphasis on the importance of improvisation in music curriculum, few current studies investigate improvisation in beginning collegiate class piano settings in relation to music aptitude and an aural approach to improvisation.

Music educators may find implications for their teaching and learning contexts through this study. Based on quantitative and qualitative data in this study, an aural approach to improvisation in beginning collegiate class piano may lead to improved music achievement and enhanced undergraduate music curricula.

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