Differences between Male and Female Students’ Confidence, Anxiety, and Attitude toward Learning Jazz Improvisation

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Published by: MENC: The National Association for Music Education


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The purpose of this study was to examine the gender differences in the social-psychological constructs of confidence, anxiety, and attitude as they relate to jazz improvisation participation. Three subscales of the Fennema-Sherman Mathematics Attitude Survey (1976) were modified for this task, and surveys (N = 332) were given to students of various ages participating in jazz programs. Returned surveys (N = 137, 41% return rate, 83 men, 54 women) were analyzed using a MANOVA design with gender, school level, and instrument choice as the independent variables. A main effect was found for gender, and a subanalysis revealed significant differences between men and women on all three dependent variables confidence, anxiety, and attitude at the level of \( p < .05 \). Cronbach's alpha reliability coefficients were .93 for confidence, .93 for anxiety, and .88 for attitude. Results suggest that social-psychological issues are influencing female participation in jazz improvisation.

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Differences between Male and Female Students' Confidence, Anxiety, and Attitude toward Learning Jazz Improvisation

The American Association of University Women (AAUW) reports that girls and women are still not equally represented in some areas of education (2000, p. 43). The AAUW reports that girls' participation in male-dominated fields such as math and science is improving (1999, p. 12); however, women remain a minority in the field of jazz. Adherence to rigid gender roles can be detrimental to the careers of both men and women by minimizing skills and values for each gender (1999, p. 108). Girls not choosing to participate in jazz studies can restrict the number of possibilities available to them in music education and performance careers (Delzell, 1994). According to the Bureau of Labor Statistics, “Those ... who can perform equally well in several musical styles have better employment opportunities” (2006).

Special thanks to Dr. Donald D. Coffman of the University of Iowa for his contributions, guidance, and support in the completion of this study. Erin Wehr-Flowers is a doctoral candidate in music education in the School of Music, Voxman Music Building, University of Iowa, Iowa City, IA 52242; e-mail: erin-wehr-flowers@uiowa.edu. Copyright © 2006 by MENC: The National Association for Music Education.
Jazz study and performance have experienced a gender gap from their conception throughout their development over the past century. McKeage (2004) found in a survey of 628 college music majors that significantly more men participate in jazz programs than women, that men spend more time than women do in jazz programs before discontinuing participation in the idiom, and that there is a dramatic attrition rate for women between high school and college jazz participation. High male-to-female ratios in jazz are also noted in studies by May (2003), Tucker (2002), Steinberg (2001), and Cartwright (2001).

Jazz programs have been growing in our American education system for the last 50 years. Schools offer extracurricular opportunities in jazz education that include contests, festivals, and concerts exposing young artists to listening and performing opportunities. Some schools offer jazz studies as part of the regular curriculum through ensembles, jazz improvisation classes, and/or jazz theory classes. Many colleges and universities now offer degrees in jazz studies and jazz pedagogy (Collier, 1994). Jazz education is more accessible than ever, yet male participation continues to surpass female participation.

Jazz studies offer students an opportunity to be creative and expressive through improvisation in an art form derived from musical elements of many cultures. Jazz improvisation is also spontaneous composition in a musical language that is uniquely American; therefore, the study of jazz and its people and culture can be considered an essential component of studying American history and American music education. Jazz studies address all nine of the MENC National Standards for Music Education, but in particular, jazz studies uniquely address Standard 3, “Improvising melodies, variations, and accompaniments,” and Standard 9, “Understanding music in relation to history and culture” (MENC, 1994). If we believe that jazz education is integral to music education, then we must acknowledge that studying jazz has the same importance for students of both genders.

Improvisation is an integral part of jazz performance. Gridley describes the difficulty in defining jazz due to its range of styles and techniques, but lists improvisation and jazz swing feeling as two elements commonly recognized as essential to jazz (1994). As jazz study becomes more specialized and advanced, there appears to be an increased expectation for improvisation and a decrease in participation by women (McKeage, 2004). Rowe reports that girls and women are participating more in jazz, but they aren’t improvising solos (Collier, 1995). Studies have explored the relationship of jazz improvisation ability and gender, and have yet to show a significant relationship. Madura (1999) investigated the relationship between gender and vocal jazz improvisation ability and the skills or knowledge needed to become a good improviser and found no significant relationship. McDaniel (1974), Hores (1977), and Bash (1984) also did not find a significant relationship between gender and high school instrumentalists’ jazz improvisation skills. The issue of girls’ and women’s participation in jazz might not be one of ability, skills, or talent but rather one based in social psychology.
North, Colley, and Hargreaves (2003) report jazz to be a sex-typed genre perceived as predominantly male in a gender-bias study investigating students’ perceptions of the work of men and women composers. Other studies suggest that girls and women are frequently less confident in their own abilities than are boys and men. Subsequently, when they perceive the subject to be more appropriate for males, girls and women do not perform at the same level as their male counterparts (Solmon, Lee, & Belcher, 2003; Tavani & Losh, 2003; Vermeer, Boekaerts, & Seegers, 2000). This lowered confidence level can affect what course of study girls choose to take, resulting in an influence on college and career decisions based on “illusions of incompetence” instead of ability (Woolfolk, 2004, p. 76). Phillips states “children’s subjective perceptions of their abilities bear a critical association to their achievement motives and orientations” (1984, p. 2012). Phillips also reported girls as being less likely to believe that satisfactory outcomes were produced by their own abilities without the assistance of parents or teachers. The perception of ability in Phillips’s study was a better predictor of achievement motivation in education than was true ability. May (2003) reinforces this idea in a jazz context, and she suggests that jazz improvisation ability is a single construct best predicted by self-evaluation of improvisational ability. Girls and women may exhibit a lower level of confidence towards jazz improvisation, and this might contribute to fewer of these individuals participating in jazz improvisation.

Feldman and Gardner suggest that creative individuals are distinguishable by their “lack of fit to their environment” (Sternberg, 1998, p. 436). Creative individuals need distance from their peers, tend to avoid interpersonal contact, and tend to resist societal demands. In contrast, adolescent females tend to be concerned with popularity and social groups (Simmons & Blythe, 1987) and want to fit into society-defined roles (AAUW, 1992). Typical instruction in jazz improvisation requires a student to begin to try improvising in front of other students. Such a setting is accompanied by the attention and judgment of those students. This setting might induce anxiety that hinders learning and creativity, particularly for young women and girls who perceive jazz as an inappropriate field for members of their sex. Ellen Rowe, currently chair of the Department of Jazz and Improvisation Studies at the University of Michigan in Ann Arbor, remembers her personal experiences of not being able to handle the attention involved with soloing, stating that young men are encouraged to seek attention, whereas women are not given the tools of confidence or self-esteem to handle such attention (Collier, 1995, p. 5).

That there are significant gender differences reported in most aspects of personality is well documented. Macdonald, Hargreaves, and Miell (2002, p. 125) summarize a Christenson and Peterson study (1988) that found men’s use of music is “central and personal” while women’s use of music is “instrumental and social.” Kemp reports men score higher on measures of introversion and some measures of independence while women score higher in measures of
sensitivity and anxiety in general populations (1996, p. 108). Kemp suggests that, similar to composers, we might expect high levels of independence in jazz musicians, as well as a lack of desire for achieving material success (p. 190). Frederickson suggests that some women and girls choose not to participate in the classroom because of social politeness and a fear of breaking norms (2000). She refers to this as female silence. A woman in the jazz idiom may avoid being successful in jazz improvisation to prevent being viewed as unfeminine by the males in the class. Adolescent girls, in particular, are interested in making and keeping friends (Manning & Hagen, 1995). Success in a male-dominated area might threaten relationships that are more important than a grade or award in improvisation. If young girls do not see success in jazz improvisation as rewarding for their gender group, they may have a less positive attitude towards learning improvisation.

Hyde and Durio (2005) distinguish between the concept of gender as either a person variable or stimulus variable. As a person variable, gender is thought of as a characteristic of the person. Psychological research conceptualizes gender as a person variable. In sociological research, gender is conceptualized as a stimulus variable where one’s gender affects information and cues received by others, which in turn influences one’s motivation or self-efficacy (p. 376). Social-psychological theories allow for the concept of self-efficacy to be domain-specific and accentuate the importance of socializers in the development of competence beliefs (p. 387).

The purpose of this study was to examine gender as a stimulus variable and compare differences between males and females on the constructs of confidence, anxiety, and attitude as they relate to jazz improvisation participation. School level and instrument choice were also considered as possible contributors to these constructs. The null hypotheses include multivariate equality of means over all groups, and no difference between males and females in confidence, anxiety, and attitude levels towards learning jazz improvisation.

METHOD

In this study, 332 surveys were given to students enrolled in middle school, junior high school, high school, college, and community jazz programs within 60 miles of a major midwestern university. Completed surveys (N = 137) were returned, comprising responses from 83 males and 54 females. Area public schools with a relationship to the university’s student teaching program were solicited, and those schools agreeing to participate in the study were recruited. Small, medium, and large schools were represented, as were rural and urban schools. Participants were categorized into three school levels: middle school/junior high students (n = 50), high school students (n = 43), and college/ adults (n = 44). The sample included 33 saxophone players, 22 trombone players, 31 trumpet players, 24 players whose major instruments were in the rhythm section, and 19
“other” players, whose music studies included voice, flute, or violin. Eight subjects did not specify their instrument. Most participants \((n = 130)\) reported currently being involved in a jazz ensemble, and 95 participants reported having played improvised solos in their ensemble.

The Fennema-Sherman Mathematics Attitude Scales (1976) were used in a form modified for jazz improvisation based on a selective model used and validated by Sarubbi (2003). Gender issues have been extensively explored in the area of mathematics (Fennema & Hart, 1994; Leder, 1992; Li, 1999). Music and mathematics are both creative subjects that share a similar issue of participation differences by gender (Piirto, 1991). The selection of the Mathematics Attitude Scales to explore gender differences in attitudes towards learning jazz improvisation is based on the issues of confidence, anxiety, and attitude as studied in mathematics (Hyde, Fennema, Ryan, et al., 1990) and the similarity of those variables to concerns reported by adult women in jazz (Collier, 1995).

The Fennema-Sherman Mathematics Attitude Scales are 9 domain-specific, Likert-type scales that measure attitudes towards learning mathematics. These scales, according to Fennema and Sherman, may be used individually or in any combination, and were designed to look at male and female differences in attitudes towards learning mathematics (1976). For the purpose of this study, the confidence, anxiety, and attitude scales were used and modified by replacing the term “mathematics” with the term “jazz improvisation.” Some terms more appropriate to jazz replaced words that were more specific to math. For example, the terms “ability” and “musical task” replaced the term “subject,” and the term “practice” replaced the term “study.”

Mean scores on 11 confidence, 12 anxiety, and 12 attitude Likert-type items produced the values for three dependent variables. Questions were given in both positive and negative form for all three variables (see Tables 1–3). Positive statements ranged from a score of 5 for “strongly agree” to 1 for “strongly disagree” responses. Negative statements ranged from a score of 1 for “strongly agree” to 5 for “strongly disagree” responses. Confidence and attitude statements alternate in the survey and are followed by the anxiety statements. A higher mean represents a greater self-confidence, less anxiety, and a more positive attitude toward learning jazz improvisation.

The possibility of gender bias inherent in the tool was addressed by distributing a conducting version of this survey and replacing the term “mathematics” with the term “conducting.” The “conducting” version was administered to 50 conducting students at a major mid-western university to validate the tool in a musical context and check for gender bias in the survey tool. Conducting is a requirement of all music majors at the university and thus provided a representative sample of music majors for comparison. Jazz improvisation and conducting have similar issues in how they are taught and learned. Both subjects require students to practice in a social context. Though one can practice improvisation and conducting skills independently, ulti-
mately the skills learned depend on the student’s interactions with the ensemble, possibly placing the student in a more anxiety inducing learning environment than typical classroom subjects. Difference test results from the trial study with conducting students \((N = 50; 48\) surveys returned from \(21\) males and \(27\) females) were not significant and suggest a lack of gender bias in the survey tool when designed for conducting students. Cronbach’s reliability coefficient was also computed to see how the test functioned in a music performance subject. Coefficients for the “conducting” version of the test were .86 for confidence, .95 for anxiety, .90 for attitude, and .98 for all statements combined.

The survey was administered during jazz band rehearsals and took approximately 10 minutes to complete. Jazz band directors and/or student teachers administered the survey to middle school and high school participants, who were instructed to take the survey home for a parent’s signature indicating approval for the child’s participation
<table>
<thead>
<tr>
<th>Item</th>
<th>W</th>
<th>Statement</th>
<th>M</th>
<th>(SD)</th>
<th>M</th>
<th>(SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>+</td>
<td>Jazz improvisation doesn’t scare me at all.</td>
<td>3.27</td>
<td>(1.19)</td>
<td>2.63</td>
<td>(1.17)</td>
</tr>
<tr>
<td>26</td>
<td>+</td>
<td>It wouldn’t bother me at all to take more jazz improvisation classes.</td>
<td>3.78</td>
<td>(1.14)</td>
<td>3.46</td>
<td>(1.00)</td>
</tr>
<tr>
<td>27</td>
<td>+</td>
<td>I haven’t usually worried about improvising a jazz solo.</td>
<td>3.11</td>
<td>(1.30)</td>
<td>2.65</td>
<td>(1.10)</td>
</tr>
<tr>
<td>28</td>
<td>+</td>
<td>I almost never have gotten nervous while performing jazz improvisation.</td>
<td>2.52</td>
<td>(1.23)</td>
<td>2.24</td>
<td>(1.11)</td>
</tr>
<tr>
<td>29</td>
<td>+</td>
<td>I usually have been at ease while performing jazz improvisation.</td>
<td>3.23</td>
<td>(1.19)</td>
<td>2.46</td>
<td>(1.06)</td>
</tr>
<tr>
<td>30</td>
<td>+</td>
<td>I usually have been at ease in jazz improvisation classes.</td>
<td>3.31</td>
<td>(.95 )</td>
<td>2.76</td>
<td>(.91 )</td>
</tr>
<tr>
<td>31</td>
<td>–</td>
<td>Improvising jazz usually makes me feel uncomfortable and nervous.</td>
<td>3.53</td>
<td>(1.18)</td>
<td>2.81</td>
<td>(1.12)</td>
</tr>
<tr>
<td>32</td>
<td>–</td>
<td>Improvising jazz makes me feel uncomfortable, restless, irritable, and impatient.</td>
<td>3.76</td>
<td>(1.08)</td>
<td>3.33</td>
<td>(1.18)</td>
</tr>
<tr>
<td>33</td>
<td>–</td>
<td>I get a sinking feeling when I think of trying to improvise jazz.</td>
<td>3.84</td>
<td>(1.14)</td>
<td>3.23</td>
<td>(1.11)</td>
</tr>
<tr>
<td>34</td>
<td>–</td>
<td>My mind goes blank and I am unable to think clearly when trying to improvise jazz.</td>
<td>3.87</td>
<td>(1.01)</td>
<td>3.39</td>
<td>(1.23)</td>
</tr>
<tr>
<td>35</td>
<td>–</td>
<td>A test on jazz improvisation performance would scare me.</td>
<td>3.22</td>
<td>(1.29)</td>
<td>2.46</td>
<td>(1.11)</td>
</tr>
<tr>
<td>36</td>
<td>–</td>
<td>Jazz improvisation makes me feel uneasy and confused.</td>
<td>3.80</td>
<td>(1.03)</td>
<td>3.20</td>
<td>(1.16)</td>
</tr>
</tbody>
</table>

in the study. Directors who did not know the exact number of students in their program received 5 more surveys than their estimate, which may have artificially inflated the nonresponse rate (59%). The researcher administered surveys to all college/adult participants. All participants were informed that they could ask questions at any time before, during, and after the survey, and that they could choose not to participate at any time during the study.

RESULTS

Data were analyzed in a MANOVA-type design using the general linear model in Statistical Package for the Social Sciences (SPSS) statistical software to test the four research hypotheses on the depen-
Table 3
*Item Number, Weight, Statement, Mean and Standard Deviation for Males and Females on the Attitude Scale*

<table>
<thead>
<tr>
<th>Item</th>
<th>W</th>
<th>Attitude toward Success in Jazz Improvisation Style</th>
<th>M</th>
<th>(SD)</th>
<th>Females</th>
<th>M</th>
<th>(SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>+</td>
<td>It would make me happy to be recognized as an excellent student of jazz improvisation.</td>
<td>4.40</td>
<td>(.84)</td>
<td>4.17</td>
<td>(.97)</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>+</td>
<td>I'd be proud to be the outstanding student in jazz improvisation.</td>
<td>4.30</td>
<td>(.73)</td>
<td>3.96</td>
<td>(1.12)</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>+</td>
<td>I'd be happy to get top grades in jazz improvisation.</td>
<td>4.42</td>
<td>(.78)</td>
<td>4.30</td>
<td>(.82)</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>+</td>
<td>It would be really great to win an award at a jazz contest.</td>
<td>4.37</td>
<td>(.87)</td>
<td>4.30</td>
<td>(.94)</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>+</td>
<td>Being the outstanding soloist at a jazz competition would make me pleased.</td>
<td>4.53</td>
<td>(.67)</td>
<td>4.15</td>
<td>(1.05)</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>+</td>
<td>Being regarded as smart in jazz improvisation would be a great thing.</td>
<td>4.30</td>
<td>(.78)</td>
<td>4.04</td>
<td>(.95)</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>−</td>
<td>Winning an outstanding jazz soloist award would make me feel unpleasantly conspicuous.</td>
<td>4.11</td>
<td>(.75)</td>
<td>3.94</td>
<td>(.83)</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>−</td>
<td>People would think that I was a creep if I was really good in jazz improvisation.</td>
<td>4.46</td>
<td>(.80)</td>
<td>4.31</td>
<td>(.84)</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>−</td>
<td>If I could improvise in jazz really well, I would try to hide it.</td>
<td>4.52</td>
<td>(.67)</td>
<td>4.24</td>
<td>(.67)</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>−</td>
<td>If I got the highest grade in jazz improvisation, I'd prefer no one knew.</td>
<td>3.82</td>
<td>(1.04)</td>
<td>3.63</td>
<td>(.98)</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>−</td>
<td>It would make people like me less if I were a really good student in jazz improvisation.</td>
<td>4.30</td>
<td>(.85)</td>
<td>4.22</td>
<td>(.90)</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>−</td>
<td>I don't like people to think I'm good at jazz improvisation.</td>
<td>4.07</td>
<td>(.91)</td>
<td>3.94</td>
<td>(1.09)</td>
<td></td>
</tr>
</tbody>
</table>

Independent variables confidence, anxiety, and attitude. Independent variables identified were gender [2 levels: male (n = 83) and female (n = 54)], school level [3 levels: middle school (n = 50), high school (n = 43), and college/adult (n = 44)], and instrument [5 levels: saxophone (n = 33), trombone (n = 22), trumpet (n = 31), rhythm section (n = 24), and other (n = 19)]. Univariate subanalysis of variance tests followed to identify dependent variables contributing to any effect.

SPSS does not have a test for the assumption of multivariate normality. The assumption of univariate normality was checked by running Q-Q plots on the dependent variables. Evaluation results for the assumption of normality were satisfactory for confidence and anxiety.
The assumption of normality for attitude is questionable due to the appearance of outliers. Levene’s test of the assumption of homogeneity of variance resulted in a fail-to-reject decision for the confidence and anxiety variables; however, homogeneity of variance was not assumed for the attitude variable. Field (2005) suggests that Wilk’s lambda is relatively robust to violations of multivariate normality. The Box’s M test of the assumption of homogeneity of covariance resulted in a fail-to-reject decision [Box’s M = 160.796, F (102, 3448.69) = 1.145, p = .154], indicating there was not a violation of the assumption. Cronbach’s alpha reliability coefficients were .93 for confidence, .93 for anxiety, .88 for attitude, and .95 for all statements combined.

The results of the MANOVA design indicated a single main effect for gender rejecting the null hypothesis of multivariate equality of means over all groups, F (3, 105) = 3.94, p < .01. Follow-up univariate tests indicate that the effect of gender was attributable to all three dependent variables, confidence, F (1, 107) = 9.67, p < .01, anxiety, F (1, 107) = 10.09, p < .01, and attitude, F (1, 107) = 4.79, p < .05. Therefore, I rejected the null hypotheses that males and females would not differ in confidence, anxiety, and attitude towards learning jazz improvisation. Means and standard deviations for the three dependent variables are summarized in Tables 1, 2, and 3.

DISCUSSION

Results indicate that females are significantly less confident, more anxious, and have less self-efficacy (attitude) towards learning jazz improvisation. The mean score for females was lower than the mean score for males on every statement of the three subscales (see Tables 1–3), which further reinforces the differences between males and females on the dependent variables.

The confidence variable was designed to measure a lack of confidence towards one’s ability to learn and to perform well on jazz improvisation tasks. Responses revealed that females were less willing to attempt jazz improvisation than were males. Mean scores for males were all above 3, showing a general level of confidence for each item (see Table 1). Mean scores for responses from females were below 3 for Items 5, 7, 13, and 19, revealing a lack of confidence for attempting more difficult improvisation tasks. The confidence dimension ranged from distinct lack of confidence to definite confidence, and was not intended to measure anxiety and/or mental confusion, interest, enjoyment, or zest in performance (Fennema & Sherman, 1976).

The anxiety variable was designed to measure feelings of anxiety, dread, nervousness, and associated bodily symptoms related to doing jazz improvisation (Fennema & Sherman, 1976). The anxiety dimension ranged from feeling at ease to those of distinct anxiety (see Table 2). Mean scores for males are above 3 for each item, with the exception of Item 28, where it is revealed that males have feelings of anxiety when attempting jazz improvisation. Mean scores for females
are below 3 for 7 items, demonstrating that anxiety might be more debilitating for females than for males.

The attitude variable was designed to measure the degree to which students anticipate positive or negative consequences as a result of success in jazz improvisation (Fennema & Sherman, 1976). Indications of this fear include anticipating negative consequences from success as well as a lack of acceptance or responsibility for success (see Table 3). Attitude scores were above 3 for males and females on every item, demonstrating that both males and females would like to be successful in jazz improvisation. Again, mean scores for males were consistently higher than those for females, demonstrating that males might foresee more positive consequences from success in jazz improvisation.

A limitation of this study is the unstableness of the attitude variable as indicated by the measures of homogeneity of variance and outliers affecting its normality. Analysis of attitude scores by subject reveals particularly low attitude scores for older adults. This is an area that warrants further exploration. The study would have more power with a larger sample, more randomization of that sample, and a more equal representation of participants across five age-groups (separating college/adult into college, adult, and senior groups).

The use of a Likert scale here is informative, but is not sufficient, to connect responses to any particular cause. That significant differences on the confidence, anxiety, and attitude variables were found between males and females on this survey suggests further research using open-ended questioning techniques to explore ideas involved in the individual items of the survey. A replication of this study in the area of vocal jazz where gender roles are reversed (Koza, 1993/1994; O’Toole, 1993/1994) would also be interesting. An experimental study could show whether instructional and environmental factors could be successfully controlled to foster female participation in the jazz idiom. Some possibilities for an experimental group include jazz ensembles or classes formed around peer groups such as a jazz flute ensemble or small combos of like personalities.

Jazz improvisation as a creative outlet connects us to our history and our culture in a way unique to itself and its repertoire. An education in jazz studies is becoming more necessary for a career in music education for music teachers to direct instrumental and vocal jazz ensembles, and to bring the multicultural aspects of jazz into the general music classroom. We have a responsibility to make this education available to all of our students. Anxiety interferes with learning and performance (Cassady & Johnson, 2002). Woolfolk suggests avoiding situations where anxious students have to perform in front of large groups (2004, p. 367). Improvisation might be better introduced in private lessons or small ensembles formed around peer groups such as a jazz flute ensemble or small combo of like personalities. All-female groups might provide the needed comfort zone for girls to try improvisation. Woolfolk also suggests students should be provided models of new tasks. Modeling jazz style and musical lan-
language in small, repeatable phrases can build confidence and jazz vocabulary. Providing instruction in how to practice jazz as well as providing recorded background materials will allow students to practice alone without the added pressures of peer evaluation.

Research thus far has failed to find differences in the skills of males and females in the field of jazz improvisation. We must then look to alternative possibilities for the gender inequality in the jazz field. Research in the fields of social psychology, music performance anxiety, sports psychology, and educational psychology may offer possible new perspectives into the male and female relationship with jazz improvisation.

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Submitted December 2, 2005; accepted November 7, 2006.