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Competitive comparison in music: Influences upon self-efficacy beliefs by gender

This study profiles gender differences in instrumental performance self-efficacy perceptions of high school students ($N = 87$) over the course of a three-day orchestra festival in which students competed against one another for rank-based seating and then rehearsed and performed as a group. Reported self-beliefs rose significantly for the sample over the course of the festival. Self-efficacy beliefs of females were significantly lower than those of males before the seating audition and first rehearsal, but were no longer different by the midpoint of the festival. Survey free-response data were coded according to Bandura's (1997) four sources of self-efficacy. A 52% drop in frequency of student comments regarding competitive comparison appeared at the same point in which female self-efficacy beliefs were no longer different than those of males. Results support past research to suggest that males and females may respond differently to rank-based competition versus social support.

Keywords: competition, gender, music, self-efficacy, social support, sources of self-efficacy

Introduction

Self-efficacy research has been prevalent for decades. Self-efficacy, which differs from other forms of self-belief in its specificity to a particular task, has demonstrated strong predictability of achievement in thousands of non-musical studies (Bandura, 1997). Self-efficacy research in music is relatively new; however, recent investigations have shown similar results to those of non-musical domains, suggesting both the strong predictability between self-efficacy perception and achievement (McCormick & McPherson, 2003; McPherson & McCormick, 2006), and the influences of contextual and environmental characteristics upon student self-beliefs (Hendricks, 2014; Martin, 2012; Nielsen, 2004; Ritchie & Williamon, 2010, 2011; Wehr-Flowers, 2006).

Perceived self-efficacy is defined as belief in the ability to execute specific actions necessary to accomplish a particular task, which influences the amount of effort

and persistence that an individual may devote to a certain activity (Bandura, 1997, 2006b; Pajares, 1996; Zimmerman, 2000). Beliefs in personal abilities influence choices, behavior, effort, endurance, and eventual achievement (Bandura, 1997; Schunk, Pintrich, & Meece, 2008). Accordingly, the study of self-efficacy in music education can assist musicians, teachers, and researchers in better understanding the processes of motivation and persistence whereby musicians can attain greater levels of mastery.

Social and contextual considerations

Self-efficacy beliefs are affected by a number of factors, including Bandura's (1977, 1997) four sources of self-efficacy:

(1) *enactive mastery experience*, or prior task achievement;

(2) *vicarious experience,* or observation of others;

(3) *verbal/social persuasion,* including feedback from others; and

(4) *physiological and affective states,* or physical and emotional conditions.

Other contextual influences such as gender, ethnicity, culture, values, ability, and domain-specific issues have also been found to affect self-efficacy perceptions (Schunk & Usher, 2012; Usher & Pajares, 2008). Past research has observed differences in the ways students of varying gender, race, and ethnicity respond to specific sources of self-efficacy (see Klassen, 2004; Usher & Pajares, 2006b).

Although self-efficacy has been studied extensively outside of the domain of music, the music education studies involving self-efficacy have been somewhat limited in terms of participant demographics. Music scholars have, however, studied other motivational theories in a variety of cultural contexts. For example, a recent collection of eight studies employed the expectancy-value model to compare students' motivation

in music as compared to six other subjects in Brazil, China, Finland, Hong Kong, Israel, Mexico, South Korea, and the United States (see McPherson & O'Neill, 2010), with follow-up studies in Singapore (Koh, 2011) and Australia (McPherson, Osborne, Barrett, Davidson, & Faulkner, 2015). As studies of musical self-efficacy are still in their relative infancy, they are still being tested in relatively homogenous contexts (as is the case in the present study), observing gender variations in self-efficacy beliefs within primarily western classical or jazz performance settings.

Gender and self-efficacy

Research has shown mixed results regarding the function of gender in the relative strength of influence from the four sources of self-efficacy. Usher and Pajares (2008) have posited that these mixed findings may be a result of individual differences in academic domains. For example, they cite research in which males reported greater mastery experiences in math (Lent et al., 1996) and science (Britner & Pajares, 2006); with females reporting greater mastery experiences and lower anxiety in writing (Pajares, Johnson, & Usher, 2007).

Females have shown a stronger influence from verbal/social persuasion and vicarious experience in a variety of domains, however, including in math (Lopez et al., 1997); writing (Pajares et al., 2007); and general academics (Usher & Pajares, 2006b). A strong influence of verbal/social persuasion and vicarious experience for females (Zeldin & Pajares, 2000) as opposed to mastery experience for males (Zeldin, Britner, & Pajares, 2008) has been shown in math, science, and technology through qualitative research.

Furthermore, Usher and Pajares (2006b) found that social persuasions accounted for 17% of the variance in female academic self-efficacy, with enactive mastery experience only accounting for 4% of the variance. In a similar study, Usher and Pajares

(2006a) found that male self-efficacy was predicted only by vicarious experience, while female self-efficacy was predicted only by social persuasions. These authors concluded that males might define their academic success in terms of particular accomplishments, while females might measure their success from information gleaned from relationships with others.

Gender and self-efficacy in music

Self-efficacy scholars in the domain of music have paid particular attention to the influence of gender upon self-efficacy perceptions, with mixed findings. For example, males have been found to have higher self-beliefs than females in music practice (Nielsen, 2004) and jazz improvisation (Wehr-Flowers, 2006), with females in the latter study also found to be less confident, more anxious, and with lower attitudes toward learning than males. Music self-efficacy research of children in primary school, however, found that girls' self-efficacy scores were significantly higher than that of boys; with regression analysis showing prosocial behaviors versus well-being, respectively, predicting boys versus girls' self-efficacy scores (Ritchie & Williamon, 2011).

Hewitt (2015) also found mixed results within his study of middle and high school band students: Female middle school students were more accurate than males in assessing their self-efficacy when compared to actual performance scores, while males tended to overrate their self-efficacy. These findings were reversed, however, with high school students in the same study.

In considering the discrepancy of findings regarding gender in music self-efficacy research, Hendricks (2014) stated, "the difference in age, level of competitiveness, and emphasis in performance rather than learning may [point] to the importance of context as a consideration in measuring self-efficacy belief" (p. 14).

Hendricks (2014) used a mixed-method approach to investigate contextual influences upon self-efficacy beliefs of males and females in a competitive honor orchestra format, and found that high-achieving (i.e., top-placed) females experienced a delayed increase in self-efficacy perceptions over the course of the festival, in contrast to similarly-achieving males and lower-achieving females. Using qualitative data to help explain these quantitative findings, the author suggested that males and females may have reacted differently to contextual influences of competitive climate versus social support.

Purpose

The present study aims to clarify and expand upon previous research by observing gender differences and other influences (i.e., sources of self-efficacy; competitive climate) upon self-efficacy perceptions over time among high school orchestra students during a three-day orchestra festival, in which students engaged in rank-based competition against each other at the outset of the festival and afterward participated in communal music making with one another.

While our method of investigation is similar to Hendricks (2014) in ensemble style and data collection and analytical approaches, we observed contextual influences upon self-efficacy perceptions in a relatively small, less competitive state festival with only one orchestra, in order to observe potential differences by gender in an environment that was similar in structure yet claimed (problematically, as described below) to emphasize social cohesiveness over competition.

Fundamental to this study was the context of this particular all-state ensemble, in which students arrived at the festival and were immediately auditioned into rank-based placements, yet afterward encouraged by the festival host and guest conductor to focus their attention away from competition and toward ensemble unity. Unlike some larger state orchestra festivals in the United States, students in this study auditioned for

placement into only one ensemble, with no qualifying district or region event beforehand. Although participants were required to qualify by audition, according to the festival host, the majority of students who auditioned were accepted.

Finally, while students were seated according to audition-based rank, both the festival host and guest conductor discouraged an emphasis upon social comparison by asking students immediately after receiving placement results and throughout the festival to focus attention away from seating (festival host), to support one another's successes (guest conductor), and work together as a community of musicians (festival host and guest conductor).

In summary, students at this festival were asked to prepare audition material in which they were to be compared against each other and placed accordingly, but afterward asked by the same administrators to focus their attention away from competition and toward ensemble unity. By observing students in this context, we aimed to highlight how contextual differences may influence student self-efficacy perceptions in an environment where students were explicitly discouraged from competitiveness, while still implicitly encouraged to compare themselves with one another through a rank-based seating placement system. Our research was framed according to the following questions:

(1) What are the influences of the sources of self-efficacy upon student self-beliefs over time in a relatively small, homogenous all-state orchestra setting in which students were placed according to rank, yet explicitly encouraged to focus away from social comparison and work together as a community?
(2) What gender differences exist in self-efficacy perceptions over time in this particular context?

(3) What other influences upon self-efficacy beliefs might students experience in this particular context?

Sample

The 87 high school students (grades 9-12) who participated in this research were members of an all-state orchestra festival, held in state with a population size in the lowest quartile in the United States (U. S. Census Bureau, 2013). The participants in this study consisted of 58 females (67%) and 29 males (33%) and represented all standard orchestral instruments, including string, woodwind, brass, and percussion. Demographic details were not available for individual participants; however, according to the festival host, the group was considerably homogenous, comprised primarily of participants from suburban communities with two-parent families, with approximately 75% of the participants belonging to a conservative Christian religion. Observations of the group indicated that the participants were almost exclusively Caucasian. As described previously, we had a particular interest in this state festival because of its relatively small size, explicit emphasis away from competition and social comparison, and encouragement of the festival host and guest conductor after the audition was complete to create a sense of musical community.

Procedure

While the theoretical principles of self-efficacy theory are applicable in a variety of fields, each domain contains its own issues and challenges. According to Bandura (2006a), each study should contain customized measurement techniques that reflect the uniqueness of the field in which the study is conducted. Furthermore, as suggested by Hargreaves and North (1997, 1999) and North and Hargreaves (2008), the study of

music psychology is incomplete without an understanding of the environment and social context in which the research is situated.

Considering the increasingly fast-paced changes in society, technology, and even music, Hargreaves and North (1999) suggest that a redefinition of focus and methods by which we observe psychological experiences in music is "long overdue" (p. 82). Appropriate means for studying musical cognitions and emotions should, they suggest, incorporate "a greater range of methodologies . . . to investigate the variety of uses which people make of music, as well as their experiences of it" (p. 82). According to these authors, this might include a greater balance of "bottom-up" (or smaller-scale, situated) studies with more traditional "top-down" (or macroscopic, generalizable) studies to reflect similar societal shifts in democratization (and, we add, in globalization). In the case of self-efficacy research, we posit that a balance in methodologies (undertaken in the present study through a quantitative/qualitative mixed-method approach, as described below) can assist researchers in better understanding the social and environmental influences that play a role in the development of self-efficacy perceptions.

This research utilized a concurrent, nested, mixed-method design (Creswell, Plano Clark, Gutmann, & Hanson, 2003) to simultaneously gather survey and observation data while the festival was in progress. Student participants filled out surveys at four points: (a) before the audition; (b) before the first rehearsal; (c) at the mid-point of the festival; and (d) at the end of the last rehearsal, before the final concert. A four-person research team also observed rehearsal activity and student behaviors throughout the festival.

Data collection instruments

Surveys

Students were asked to fill out the Instrumental Performance Self-Efficacy Surveys (Pre-Audition, Pre-Rehearsal, Pre-Concert), which were designed by Hendricks (2014) according to self-efficacy theory guidelines (Bandura, 2006a, 2012) and customized for use in ensemble audition, rehearsal, and performance settings, respectively. As shown in Table 1, these surveys contained both repertoire-specific and context-specific questions, including issues of technical mastery and expressive performance; handling general challenges of the event; playing in a way that would enhance the orchestra; playing at a level that would impress others; and playing at a level equal to that of others. As recommended by Bandura (2006a), items were presented in increasing gradations of challenge. Students were asked to rate their percentage of confidence on an 11-point rating scale (from 0% to 100%, in ten-point increments) that they could perform each of the specified tasks. The Pre-Rehearsal and Pre-Concert surveys each contained a qualitative free response section, where participants were invited to further expound upon one survey item of choice.

Table 1. Items in the instrumental performance self-efficacy surveys (Hendricks, 2014)
[Table 1 to appear here]

According to Heller and O'Connor (2002), researchers should re-test reliability when using a previously-designed measure, in order to verify reliability with the sample studied. Whereas Hendricks (2014) produced high Cronbach's alpha reliability coefficients (.85, Pre-Audition; Pre-Rehearsal, .88; Pre-Concert, .91), the present sample demonstrated even stronger item homogeneity for each survey (Pre-Audition, .94; Pre-Rehearsal (first rehearsal), .94; Pre-Rehearsal (festival mid-point), .93; Pre-Concert, .92).

Observations

Research team members took observations notes of all rehearsals, describing particular student behaviors and tracking them by rehearsal day and time so as to corroborate notes with those of other research team members. Furthermore, research team members met following each rehearsal and engaged in an audio-recorded dialogue to identify primary issues that emerged during their observations.

Analysis

Survey data were analyzed using mixed-design repeated measures ANOVA in SPSS, with time as the within-subjects variable and gender as the between-subjects variable (Field, 2009; Green & Salkind, 2005). For purposes of mixed-method complementarity (Greene, 2007; Greene, Caracelli, & Graham, 1989), qualitative free-response survey data were used to clarify, elaborate, and illustrate the quantitative findings.

Open-ended items on the survey were coded according to the sources of self-efficacy, noting positive versus negative influences for each source. The qualitative responses were then coded again for emergent themes that aligned with important issues as identified by the quantitative findings and from the research team in post-rehearsal discussions. Codes were corroborated among research team members via separate coding and subsequent discussion. Frequencies were tabulated for those coded data that helped to illustrate and/or clarify statistical findings. Findings are organized below according to the above-mentioned research questions.

Changes in self-beliefs over time

Repeated measures analysis of variance was calculated with Greenhouse-Geisser correction to account for differences in variance between individual pairings of groups. Analysis revealed a significant main effect for time, $F(2, 134) = 55.76$, $p < .001$. As

shown in Figure 1, pairwise comparisons indicated significant changes in students' self-efficacy scores over time between the audition and the first rehearsal ($p < .001$), between the first rehearsal and the midpoint of the festival ($p = .004$), and between the midpoint of the festival and the final concert ($p < .001$).

[Figure 1 to appear here]

Figure 1. Changes in self-efficacy beliefs over time.

Differences by gender over time

Repeated measures analysis also revealed a significant interaction between gender and time, $F(2, 134) = 2.97$, $p < .05$. Post-hoc contrasts between males and females were calculated with Bonferroni adjustment to reduce the probability of Type I error due to multiple comparisons. Males reported significantly higher self-efficacy perceptions than females before the audition and before the first rehearsal, while gender differences were no longer significant at the mid-point of the festival or before the final concert (see Figure 2).

[Figure 2 to appear here]

Figure 2. Differences by gender over time.

Qualitative analysis: sources of self-efficacy at the festival midpoint

Statistical results highlighted the midpoint of the festival in two ways. First, while self-efficacy scores still increased significantly for the sample as a whole, the increase was not as pronounced (i.e., yielded a higher p value) at the midpoint than at other points in the festival. Secondly, at this point of the festival female self-efficacy scores were no longer significantly lower than those of males.

Qualitative free-response data from the mid-point Pre-Rehearsal Survey were analyzed, therefore, in order to provide deeper insights into the contextual influences

upon changes in student self-beliefs at this festival midpoint. Data were first coded according to the sources of self-efficacy for all students, and then again to observe any particular patterns by gender. No notable qualitative gender differences were found at this time point; however, the analysis highlighted important findings regarding the influences of the sources of self-efficacy for the sample as a whole, as described below.

Data were coded according to each source of self-efficacy and rated as negative or positive influences. Analysis revealed an overwhelmingly positive influence of *enactive mastery experience,* as students attributed increased self-efficacy beliefs to their practice with the ensemble. Results also suggested generally negative influences from *vicarious experience*, as expressed through student comments of comparison with others; *verbal/social persuasion*, as experienced through interactions with the conductor; and *physiological/affective states*, as expressed through student comments regarding fatigue. Each self-efficacy source influence is further described below.

Enactive mastery experience

Forty-four out of 53 comments that were coded for enactive mastery experience were positively-stated, including some statement regarding a sense of improvement and accomplishment (e.g., “After playing through the music with the entire orchestra, I feel like I understand the music better, and so I can play with more feeling;” “I feel that I can play the passages better each time we rehearse. It gets easier to play and then I feel more confident”). In sum, student comments overwhelmingly pointed to a sense of accomplishment and development through practice.

Vicarious experience

A negative influence from vicarious experience was demonstrated by socially comparative free response comments on the mid-point Pre-Rehearsal Survey. Eleven

out of 18 students who explicitly compared their abilities with others in the ensemble did so in a self-defeating way (e.g., “There are so many people here better than me, and I feel that I could possibly disappoint [the conductor] compared to the other students”).

Verbal/social persuasion

Qualitative comments at the midpoint of the festival suggest that student self-beliefs were negatively influenced by the conductor’s demanding standards and/or lack of praise. Nine out of 13 responses that directly addressed verbal persuasion from the conductor were coded as negatively influential, and highlighted the disparity between students’ self-efficacy beliefs and the conductor’s high standards (e.g., “The man’s tough. He wants a very specific sound, and I don’t know if I can do it the way he wants it”) and/or limited verbal encouragement (e.g., “I thought we would impress the conductor but yesterday he seemed disappointed so I guess we don’t have a high ability to impress him. He doesn’t compliment us very much”).

Physiological/affective states

Student comments also expressed a high level of fatigue at the midpoint of the festival. Twelve out of 13 comments regarding physiological and affective states were coded as negatively influential, and included statements suggesting fatigue (e.g., “One long day of rehearsing is hard and I find it difficult to keep enthusiastic the entire time;” “I usually don’t play nearly this much in a day, never actually, so my wrist is quite tired;” and “I’m getting to be tired, and if it goes a lot more intensely, I’m going to flip.”

Competition versus community

Our last research question addressed the socio-psychological influences that students experienced in this small, homogenous honor orchestra setting in which (despite the use

of traditional rank-based seating) students were repeatedly encouraged by the festival host and guest conductor to work together as a community.

As observed by the research team, the festival host and guest conductor each made efforts throughout the weekend to encourage a sense of community among orchestra members. For example, at the outset of the festival (i.e., immediately after students were seated in rank-based order), the festival host began announcements by asking students explicitly to direct their attention away from seating and make music together. The guest conductor encouraged students throughout rehearsals to applaud for other sections and soloists after musical accomplishments, repeatedly talked about making music together as an ensemble, and engaged them in a group visualization activity before the concert in which they were encouraged to focus on group expressiveness.

Qualitative free-response data suggest a general decline in student emphasis on social comparison over the course of the festival. Immediately after receiving seating placement (viz., before the first rehearsal), 23 out of 29 comments regarding social comparison were stated in a negative or self-defeating way, as compared to 11 of 18 at the festival midpoint, and 6 of 11 immediately before the concert. Negatively-stated social comparisons, therefore, dropped 52% between the first rehearsal and the festival midpoint, and decreased another 45% between the midpoint and the final concert. Not only did the number of comments regarding social comparison decrease over time, but also the ratio of negative to positive social comparisons (i.e., 23:6; 11:7; 6:5), as the frequency of positive comments regarding social comparison remained virtually unchanged.

Discussion

We chose a mixed-method approach for the purpose of complementarity (Greene, 2007;

Greene, Caracelli, & Graham, 1989), using qualitative findings to illustrate, clarify, and elaborate upon statistical results. Teddlie and Tashakkori (2009) suggest that mixed-method research can yield further insights through "meta-inference," or "integration of the inferences that have been obtained from the results of the [qualitative] and [quantitative] strands" of research (p. 152). In this section we integrate findings from quantitative and qualitative data, and relate these directly to findings of Hendricks (2014) as well as other past research, in order to further highlight potential contextual influences upon instrumental performance self-efficacy beliefs in this setting.

Increase in self-efficacy beliefs over time

Similar to findings of Hendricks (2014), student self-efficacy scores in this study increased significantly for the student sample over time. An in-depth, qualitative analysis of student comments at the midpoint of the festival revealed a generally positive influence of enactive mastery experience, with generally negative influences from vicarious experience, verbal persuasion, and physiological states.

While it might not be surprising that students expressed a sense of fatigue during a long day of rehearsing, the generally negative comments regarding the conductor's lack of praise, along with socially comparative comments, further highlight the intensity of the rehearsal climate at this point in time. Although the festival host and conductor had encouraged communal music making throughout the course of the festival (viz., after the audition), free-response comments at the festival midpoint suggest that the conductor did, nevertheless, impose a high level of musical standards that challenged the students' sense of self-efficacy.

Festival mid-point comments coded as enactive mastery experience were more frequent than all other sources combined. These findings align with Bandura's (1997) position that enactive mastery experience is the most influential of the four sources of

self-efficacy. Although student comments at the midpoint of the festival highlighted negative influences from social comparison, fatigue, and lack of encouragement from the conductor, the overwhelmingly positive comments regarding accomplishment and development through practice may help to explain the persistent increase in self-efficacy scores over the course of the festival.

Trends by gender

While Hendricks (2014) observed gender interactions over time in two separate, hierarchically-based orchestras, the present study focused on gender differences in only one orchestra that was less competitive in a number of respects (as described previously). We found a significant interaction between gender and time ($p < .05$), with female self-efficacy beliefs significantly lower than those of males before the audition and first rehearsal, but with no significant difference between females and males at the midpoint of the festival and before the final concert.

The primary difference between trends of female self-beliefs in the present study, in contrast to those of Hendricks (2014), can be found at the second data-collection point, (i.e., before the first rehearsal, after students had been placed into seating). In Hendricks (2014), female self-efficacy scores split at this time point (n.b., after students had been placed into seating in one of the two rank-based orchestras), with females placed into the *higher* orchestra showing no increase in self-efficacy perceptions, whereas *lower*-placed females' self-efficacy scores significantly increased. Hendricks (2014) used qualitative data to suggest that this lack of increase in higher-achieving females may have been a result of the intense competitive nature of the higher orchestra, in comparison to a more cohesive and community-focused lower orchestra.

The present research, which featured only one orchestra, did not reveal any unusual discrepancies in self-efficacy beliefs at the point after students were placed:

While both female and male self-efficacy scores rose significantly, female scores were still significantly lower than those of males. At the third data-collection (i.e., midpoint of the festival, however, after students had rehearsed together as a group), no significant differences were found among genders in either study.

The high frequency of positive enactive mastery experience reported by both male and female students (as described above) resonates with one of the explanations suggested by Hendricks (2014) for the delayed increase this researcher found in top-orchestra female self-efficacy beliefs: "high-achieving females [may have developed] confidence after having the opportunity to demonstrate their capability to perform" (p. 11). The findings from this study align with previous research in music and other academic domains to suggest that females might underestimate their abilities and place more focus on lack of competence in comparison to males (Kashani et al., 1989; Kenny, 2011; Pajares, 1996, 2003).

Furthermore, the findings of our research support those of Mackay and Parkinson (2010) who found higher male self-efficacy beliefs at the outset of an electricity-related design and construction task, but suggested that active engagement in that task led to higher levels of female self-efficacy and task performance equal to males. As such, this study offers important implications for females in competitive and other performance situations: Given an opportunity to demonstrate actual (rather than projected) competence, self-efficacy beliefs and related performance of females may become more equal with that of males.

Competition and gender in music education

Although the festival host explicitly discouraged students from comparing themselves with others at the outset of the festival, survey responses immediately following rank-based seat placement suggest that students nevertheless associated their abilities with

their placements and still compared their abilities with those of others in the ensemble. Past research has suggested that the desire to compete may have more to do with familiarity, tradition, or coercion than with an intrinsic need (Austin, 1988, 1991; Burnsed, Sochinski, & Hinkle, 1983; Rogers, 1985).

While our findings do not necessarily support these earlier studies, they also do not contradict them; each student at the festival entered after years of experience with other teachers and in other programs that may have already fostered a sense of competition or community. What we can surmise here is that traditions or practices of competitiveness may not be easily supplanted by the mere verbal encouragement of an authority figure, especially in a system that still maintains underlying competitive structures (e.g., seating rank).

Of note, however, is the decline over the course of the festival in the frequency of competitive comments from all students, as well as the ratio of self-negating to self-promoting comparisons. This decline in competitive and self-negating comparisons corresponded with an observed shift in focus over the course of the festival away from seating rank (toward ensemble performance and a sense of community), as emphasized and encouraged by the conductor and festival host. This finding supports the research cited above, suggesting that the level of competitiveness and social comparison in which students engage may be externally influenced.

Furthermore, considering Hendricks's (2014) suggestion that self-efficacy beliefs of males and females might be differently influenced by competitive climate versus social support, it is notable that female self-efficacy beliefs in this study were no longer significantly lower than those of males at the same point that negative social comparisons for all students decreased 52%. While self-efficacy scores for all students rose over time, it is possible that the discrepancy between male and female self-beliefs

at the outset of the festival may have been related to the heavier emphasis on competition at that point. Future research may, therefore, further investigate the influence of competition versus social support on male versus female self-efficacy beliefs.

Considerations for general education and future research

This research sought to observe contextual influences upon instrumental performance self-efficacy perceptions of students in a small honor orchestra ensemble where students were encouraged to focus their attention away from competitive comparison and toward communal music making. The question remains, however, as to the inherent value of competition as a motivational technique in music and other educational domains – including in the practice of high-stakes testing or assessments in which students are ranked against one another - considering the influence it might have on self-efficacy beliefs of adolescent musicians and the unfair advantage it may impose for males over females. We therefore echo the recommendations of Ashley (2010), who has suggested that "teachers require a significantly enhanced level of gender-related subject knowledge, gender awareness and interpersonal skill" (p. 47) in order to more effectively meet the educational needs of all students.

As discussed previously, our study supports past research to suggest that males and females might respond differently to competitive structures versus social support. We recognize, however, that further complications arise when attempting to generalize such activities to one type of student or population, especially at a time in history when educators are learning to celebrate the diversity in learners and educational approaches. Other scholars, for example, have found gender biases in different forms of musical activities (Armstrong, 2008; Green, 1997; Harrison & O'Neill, 2002; Ho, 2009). Future research might, therefore, further investigate the influence of rank-based competition

versus collaborative educational approaches upon student self-efficacy beliefs in more diverse music and general education settings as well as noting influences upon self-efficacy beliefs among students with varying gender identity or expression.

This is particularly important when considering the relationship between self-efficacy and students' anxiety (Bandura, 1977; Dempsey, 2015; Pajares, Johnson, & Usher, 2007), achievement (Miksza, 2015), and overall well-being. Given the integral role of motivation in general education to promote choice, effort, persistence, and achievement (Bandura, 1997; Schunk, Pintrich, & Meece, 2008), the results of the present study may inform ways in which teachers in music and other content areas design instruction and provide supports for the self-beliefs of all students, which we found to differ among males and females before students engaged in task-specific mastery experiences.

Future research might also expand on the present study to include examination of self-efficacy perception of music students in other countries and cultures. Noting the considerable homogeneity of the present sample, we recommend further studies from more diverse populations, which might include other western classical ensembles with less homogenous membership, as well as observation of other forms of communal music making throughout the world that are not inclined to be competitive. As discussed in the introduction to this article, other forms of motivation in music have been studied in a variety of cultural contexts (McPherson & O'Neill, 2010). A similar study using a self-efficacy framework could be beneficial to understanding the complexity of self-efficacy perception's interaction with gender and other factors present in a broader, multi-national context, as well as those interactions present in unique contexts outside the scope of the present study.

Finally, this nested mixed-method study was necessarily limited in the amount of

depth and detail that qualitative data could provide. While the open-ended survey data were useful in terms of better understanding the statistical findings, analysis of these comments does not allow for a rich discussion regarding the complexities of difference among individual students. We recommend, therefore, further investigation through a qualitative approach that goes beyond open-ended survey responses (e.g., interview, case study) to provide a deeper understanding of how individual learners respond to competitive structures.

Conclusion

This study has expanded upon research by Hendricks (2014) to observe gender differences in self-efficacy perceptions of high school instrumentalists. By profiling changes in self-beliefs over the course of an all-state orchestra festival and then complementing statistical findings with corresponding qualitative data, we have highlighted the influence of enactive mastery experience in promoting strong self-beliefs.

Similar to Zelenak (2015), this study demonstrates the critical role that mastery experiences can play in promoting positive self-beliefs. This research further raises important questions about how early mastery experiences could be beneficial to promoting positive self-beliefs of females in competitive contexts. Our findings support past research to suggest that females might at first underestimate their achievements, but given an opportunity to demonstrate competence, those self-beliefs may be no different than those of males. Findings also resonate with past research to suggest that the amount to which students engage in competitive comparison may be influenced by external sources such as authority figures. Finally, self-efficacy perceptions of males versus females may be differently influenced by levels of competitiveness versus social support but, given an opportunity to demonstrate actual skills, female self-beliefs may

be more equal to those of males.

The festival studied here began with a competitive, socially-comparative activity (i.e., rank-based seating audition) but shifted over time to one of ensemble music making. Similar to findings of Hendricks (2014), female self-efficacy beliefs became equal to those of males by the end of the festival, at a point when the audition was over and students were focused on collaboratively making music together. The present study further highlights the potential influence of social support upon female self-efficacy perceptions by demonstrating a qualitative shift in student free-response comments from competitive comparison at the outset of the festival toward communal music making as the festival continued, at the same point in which female self-efficacy beliefs were no longer significantly lower than those of males.

Based on the findings of this and previous research, we propose that educators may do well to note differences in how students respond to various contexts, and offer diverse activities and approaches to promote self-beliefs of all students. This might include offering self-efficacy instruction, which was found by Miksza (2015) to be beneficial in fostering achievement gains and nuanced musical objectives in students' practice. Such instruction could help provide support for all students, particularly in contexts in which an imbalanced emphasis on competition could give unfair advantage to males due to the focus on ranking against others as a measure of achievement.

Music education systems in the United States have traditionally emphasized competitive-referent achievement as a means of motivating students to practice (see Austin, 1990, 1991; Hendricks, Smith, & Stanuch, 2014; McPherson & Hendricks, 2010). However, recent scholars have suggested that an overemphasis on competition in music may in fact limit the attractiveness and accessibility of music to youth (Isbell & Stanley, 2011; McPherson & Hendricks, 2010; Radocy, 2001).

We suggest, therefore, that music educators in the United States and those elsewhere who have utilized competitive-referent achievement consider balancing the amount of activities that encourage social support in order to meet the needs and interests of a broader population, including enhancing music self-efficacy beliefs of females. We further suggest that teachers may help students develop a robust sense of self-efficacy by highlighting enactive mastery experiences that help them recognize their competence, and encourage them to reflect regularly upon those experiences so they may have a greater sense of anticipation toward success in other similar contexts.

References

Armstrong, V. (2008). Hard bargaining on the hard drive: Gender bias in the music technology classroom. *Gender and Education*, *20*(4), 375-386.

Ashley, M. (2010). Slappers who gouge your eyes: vocal performance as exemplification of disturbing inertia in gender equality. *Gender and Education*, *22*(1), 47-62.

Austin, J. R. (1988). The effect of music contest format on self-concept, motivation, achievement, and attitude of elementary band students. *Journal of Research in Music Education, 36*, 95-107.

Austin, J. R. (1990). Competition: Is music education the loser? *Music Educators Journal, 76*(6), 21-25.

Austin, J. R. (1991). Competitive and non-competitive goal structures: An analysis of motivation and achievement among elementary band students. *Psychology of Music, 19*, 142-158.

Bandura, A. (1977). *Social learning theory.* Englewood Cliffs, NJ: Prentice Hall.

Bandura, A. (1997). *Self-efficacy: The exercise of control.* New York, NY: W. H. Freeman.

Bandura, A. (2006a). Guide for constructing self-efficacy scales. In F. Pajares & T. Urdan (Eds.), *Self-efficacy beliefs of adolescents* (pp. 307-337). Greenwich, CT: Information Age.

Bandura, A. (2006b). Toward a psychology of human agency. *Perspectives on Psychological Science, 1,* 164-180.

Bandura, A. (2012). On the functional properties of perceived self-efficacy revisited. *Journal of Management, 38,* 9-44.

Britner, S. L., & Pajares, F. (2006). Sources of science self-efficacy beliefs of middle school students. *Journal for Research in Science Teaching, 43,* 485-499.

Burnsed, V., Sochinski, J., & Hinkle, D. (1983). The attitude of college band students toward high school marching band competition. *Journal of Band Research, 19,* 11-17.

Creswell, J. W., Plano Clark, V. L., Gutmann, M. L., & Hanson, W. E. (2003). Advanced mixed methods research designs. In A. Tashakkori & C. Teddlie (Eds.), *Handbook of mixed methods in social and behavioral research* (pp. 209-240). Thousand Oaks, CA: Sage.

Dempsey, E. (2015). *Music performance anxiety in children and teenagers: Effects of perfectionism, self-efficacy, and gender* (Unpublished masters thesis). University of Ottawa, Ottawa, Canada.

Field, A. (2009). *Discovering statistics using SPSS* (3rd ed.). Thousand Oaks, CA: Sage.

Green, L. (1997). *Music, Gender, Education.* Cambridge, UK: Cambridge University Press.

Green, S., & Salkind, N. J. (2005). *Using SPSS for Windows and Macintosh: Analyzing and understanding data* (4th ed.). Upper Saddle River, NJ: Prentice Hall.

Greene, J. C. (2007). *Mixed methods in social inquiry.* San Francisco, CA: Jossey-Bass.

Greene, J. C., Caracelli, V. J., & Graham, W. F. (1989). Toward a conceptual framework for mixed-method evaluation designs. *Educational Evaluation and Policy Analysis, 11,* 255-274.

Hargreaves, D. J., & North, A. C. (1997). *The social psychology of music*. Oxford, U.K.: Oxford University Press.

Hargreaves, D. J., & North, A. C. (1999). The functions of music in everyday life: Redefining the social in music psychology. *Psychology of Music*, *27*(1), 71-83.

Heller, J. J., & O'Connor, E. J. (2002). Maintaining quality in research and reporting. In R. Colwell & C. Richardson (Eds.), *The new handbook of research on music teaching and learning* (pp. 1089-1107). New York, NY: Oxford University Press.

Hewitt, M. P. (2015). Self-efficacy, self-evaluation, and music performance of secondary-level band students. *Journal of Research in Music Education* Online First. doi:10.1177/0022429415595611

Harrison, A. C., & O'Neill, S. A. (2002). The development of children's gendered knowledge and preferences in music. *Feminism & Psychology, 12,* 145-152.

Hendricks, K. S. (2014). Changes in self-efficacy beliefs over time: Contextual influences of gender, rank-based placement, and social support in a competitive orchestra environment. *Psychology of Music, 42*, 347-365.

Hendricks, K. S., Smith, T. D., & Stanuch, J. (2014). Creating safe spaces for music learning. *Music Educators Journal 101*(1), 35-40.

Ho, W. C. (2009). Gender differences in instrumental learning among secondary school students in Hong Kong. *Gender and Education*, *21*(4), 405-422.

Isbell, D., & Stanley, A. M. (2011). Keeping instruments out of the attic: The concert band experiences of the non-music major. *Music Education Research International*, *5*, 22-32.

Kashani, J. H., Orvaschel, H., Rosenberg, T. K., & Reid, J. C. (1989). Psychopathology in a community sample of children and adolescents. *Journal of the American Academy of Child & Adolescent Psychiatry*, *28*, 701–706.

Kenny, D. T. (2011). *The psychology of music performance anxiety*. Oxford, U.K.: Oxford University Press.

Klassen, R. M. (2004). A cross-cultural investigation of the efficacy beliefs of South Asian immigrant and Anglo non-immigrant early adolescents. *Journal of Educational Psychology, 96,* 731-742. doi:10.1037/0022-0663.96.4.731

Koh, C. K. (2011). *Adolescents' motivation to study music as compared to other school subjects: A Singaporean perspective* (Doctoral dissertation, University of Illinois at Urbana-Champaign).

Lent, R. W., Lopez, F. G., Brown, S. D., & Gore, P. A. (1996). Latent structure of the sources of mathematics self-efficacy. *Journal of Vocational Behavior, 49,* 292-308.

Lopez, F. G., Lent, R. W., Brown, S. D., & Gore, P. A. (1997). Role of social-cognitive expectations in high school students' mathematics-related interest and performance. *Journal of Counseling Psychology, 44,* 44-52.

Martin, L. (2012). The musical self-efficacy beliefs of middle school band students: An investigation of sources, meanings, and relationships with attributions for success and failure. *Bulletin of the Council for Research in Music Education, 191,* 45-60.

Mackay, J., & Parkinson, J. (2010). Gender, self-efficacy and achievement among South African technology teacher trainees. *Gender and Education*, *22*(1), 87-103.

McCormick, J., & McPherson, G. E. (2003). The role of self-efficacy in a musical performance examination: an exploratory structural equation analysis. *Psychology of Music, 31*, 37-51.

McPherson, G. E., & McCormick, J. (2006). Self-efficacy and music performance. *Psychology of Music, 34*, 325-339.

McPherson, G. E., & Hendricks, K. S. (2010). Students' motivation to study music: The United States of America. *Research Studies in Music Education 32*(2), 201-213.

McPherson, G. E., & O'Neill, S. A. (2010). Students' motivation to study music as compared to other school subjects: A comparison of eight countries. *Research Studies in Music Education, 32*(2), 101-137.

McPherson, G. E., Osborne, M. S., Barrett, M. S., Davidson, J. W., & Faulkner, R. (2015). Motivation to study music in Australian schools: The impact of music learning, gender, and socio-economic status. *Research Studies in Music Education*, Online First doi:10.1177/1321103X15600914

Miksza, P. (2015). The effect of self-regulation instruction on the performance achievement, musical self-efficacy, and practicing of advanced wind players. *Psychology of Music, 43*(2), 219-243.

Nielsen, S. G. (2004). Strategies and self-efficacy beliefs in instrumental and vocal individual practice: A study of students in higher music education. *Psychology of Music, 32*, 418–431.

North, A. C., & Hargreaves, D. J. (2008). *The social and applied psychology of music*. Oxford: Oxford University Press.

Pajares, F. (1996). Self-efficacy beliefs in academic settings. *Review of Educational Research, 66,* 543-578.

Pajares, F. (2003). Self-efficacy belief, motivation, and achievement in writing: A review of the literature. *Reading and Writing Quarterly, 19,* 139-158.

Pajares, F., Johnson, M. J., & Usher, E. L. (2007). Sources of writing self-efficacy beliefs of elementary, middle, and high school students. *Research in the Teaching of English, 42,* 104-120.

Radocy, R. E. (2001). North America. In D. J. Hargreaves & A. C. North (Eds.), *Musical development and learning: The international perspective* (pp. 120-133). London, United Kingdom: Continuum.

Ritchie, L., & Williamon, A. (2010). Measuring distinct types of musical self-efficacy. *Psychology of Music, 39,* 328-344.

Ritchie, L., & Williamon, A. (2011). Primary school children's self-efficacy for music learning. *Journal of Research in Music Education, 59,* 146-161.

Rogers, G. L. (1985). Attitudes of high school band directors and principals toward marching band contests. *Journal of Research in Music Education*, *33*(4), 259-267.

Schunk, D. H., Pintrich, P. R., & Meece, J. L. (2008). *Motivation in education: Theory, research, and applications.* Columbus, OH: Prentice Hall.

Schunk, D. H., & Usher, E. L. (2012). Social cognitive theory and motivation. In R. M. Ryan (Ed.), *The Oxford handbook of human motivation* (pp. 13-27). New York, NY: Oxford University Press.

Teddlie, C., & Tashakkori, A. (2009). *Foundations of mixed methods research: Integrating quantitative and qualitative approaches in the social and behavior sciences.* Thousand Oaks, CA: Sage.

U.S. Census Bureau. (2013). *2010 Census Data.* Retrieved from http://www.census.gov/2010census/data/

Usher, E. L., & Pajares, F. (2006a). Inviting confidence in school: Invitations as a critical source of the academic self-efficacy beliefs of entering middle school students. *Journal of Invitational Theory and Practice, 12,* 7–16.

Usher, E. L., & Pajares, F. (2006b). Sources of academic and self-regulatory efficacy beliefs of entering middle school students. *Contemporary Educational Psychology, 31,* 125-141.

Usher, E. L., & Pajares, F. (2008). Sources of self-efficacy in school: Critical review of the literature and future directions. *Review of Educational Research, 78,* 751-796.

Wehr-Flowers, E. (2006). Differences between male and female students' confidence, anxiety, and attitude toward learning jazz improvisation. *Journal of Research in Music Education, 54*, 337-349.

Zeldin, A. L., Britner, S. L., & Pajares, F. (2008). A comparative study of the self-efficacy beliefs of successful men and women in mathematics, science, and technology careers. *Journal of Research in Science Teaching*, *45*, 1036-1058.

Zeldin, A. L., & Pajares, F. (2000). Against the odds: Self-efficacy beliefs of women in mathematical, scientific, and technological careers. *American Educational Research Journal, 37,* 215-246.

Zelenak, M. S. (2015). Measuring the sources of self-efficacy among secondary school music students. *Journal of Research in Music Education, 62*(4), 389-404.

Zimmerman, B. J. (2000). Self-efficacy: An essential motive to learn. *Contemporary Educational Psychology, 25,* 82-91.