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The Sources of Self-Efficacy: Educational Research and Implications for Music

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Abstract

Music teachers can empower students with control over their own musical ability development by helping them foster positive self-efficacy beliefs. This article reviews general education and music research regarding Bandura's theoretical four sources of self-efficacy (enactive mastery experience, vicarious experience, verbal/social persuasion, physiological and affective states), in order to guide music teachers in determining effective methods and approaches to help students develop a sense of musical self-efficacy and subsequent musical achievement. A brief summary of each self-efficacy source category is provided, along with a discussion of the means whereby self-efficacy perceptions can be developed within both general education and music learning environments. Each of these four sections reviews research and simultaneously provides corresponding practical suggestions for educators.

Keywords: education, motivation, music, self-efficacy, sources of self-efficacy

The Sources of Self-Efficacy: Educational Research and Implications for Music

For centuries, educational scholars have recognized the power of the individual will to direct human conduct, persistence, and even achievement. Recently, educational psychologists have pointed to the role of cognition and choice in producing certain actions and behaviors. By educating students about their thought processes rather than coercing action, scholars suggest that teachers can provide students with enduring cognitive tools that will guide them in decision-making processes throughout their lives (Bandura, 1997; McPherson & Zimmerman, 2002; Zimmerman, Bonner, & Kovach, 1996).

Educational researchers have suggested that teachers may be able to help students learn to manage their self-efficacy beliefs, which can in turn positively influence persistence, self-regulation, and subsequent task-based achievement (Bandura, 1997; Pajares & Urdan, 2006; Zimmerman, 2000). A sense of self-efficacy, or belief in one's ability to accomplish a specific task, motivates individuals to persist despite setbacks, become more actively involved in a task, and work harder and longer toward attainment (Bandura, 1997, 2012).

Music education scholars have studied self-efficacy for over a decade, especially since the publication of two seminal studies demonstrating the predictive power of self-efficacy belief in music performance (McCormick & McPherson, 2003; McPherson & McCormick, 2006). The authors of these studies emphasized the importance of teacher focus upon student self-beliefs: "teachers should pay more attention to their students' perceptions of their own personal competence, given evidence that these types of perceptions accurately predict their motivation and the future decisions they make about

their desire to continue improving” (McPherson & McCormick, 2006, p. 337).

Subsequent research has revealed various influences upon musical self-efficacy belief, including differences by gender in contexts of music practice and degree program (Nielsen, 2004); jazz improvisation (Wehr-Flowers, 2006); primary school music (Ritchie & Williamon, 2011); and instrumental performance (Hendricks, 2014). Other scholars have found positive influences from a conductor’s mastery orientation and shared expressive performance cues (Matthews & Kitsantas, 2013); modeled instruction (Davison, 2006; Watson, 2010); and differences in music learning self-efficacy beliefs between university and conservatory students (Ritchie & Williamon, 2010).

While previous research in music self-efficacy has demonstrated the relationship between self-belief and achievement and observed a number of influences upon self-efficacy perceptions, relatively little attention has been placed upon Bandura’s (1977, 1997) *sources* of self-efficacy, or the means whereby strong ability-based beliefs can be fostered. According to self-efficacy theory, influences upon self-belief can be divided into four sources: *enactive mastery experience*, or prior task-based achievement; *vicarious experience*, or observation of peers and other role models; *verbal/social persuasion*, or encouragement from others; and *physiological and affective states*, or physical/emotional conditions (Bandura, 1977, 1997; Usher & Pajares, 2008).

The relative influence of each source of self-efficacy has been found to vary according to contextual factors such as gender, ethnicity, culture, values, ability, and domain (Schunk & Usher, 2012; Usher & Pajares, 2008). For example, Usher and Pajares (2006) reported a higher influence from social persuasions among African-American and female students as compared to White or male students, while Klassen (2004) found a

greater influence of vicarious experience and social persuasion among Indo-Canadian students than Anglo-Canadian students. Research has also suggested that youth raised in Asian (Salili, Chiu, & Lai, 2001) or Asian-American (Eaton & Dembo, 1997) cultures have lower academic efficacy beliefs in comparison to youth raised in Western cultures, even when outperforming them. Oettingen and Zosuls (2006) attribute these discrepancies to inherent differences in cultural values regarding effort, ability, achievement, and success.

Zelenak (2011) suggested that the sources of self-efficacy may be particularly difficult to measure in music because of the unique and complex simultaneous coordination of multiple skills that are required for musical performance. The synchronized exercise of these multiple skills, when met with contextual characteristics such as those addressed in educational literature above, may be further influenced by particular educational contexts in which music students learn and perform. For example, in a study of advanced high school musicians participating in a competitive orchestra festival, Hendricks (2014) found that students generally experienced a positive influence from enactive mastery experience, but suggested that females may have responded differently than males to vicarious experience and verbal persuasion.

More research regarding the sources of self-efficacy is needed to consider the particular complexities of self-belief that might unfold in music learning settings. At present, however, we can look to educational research as a starting point to provide insight into ways in which music students might be similarly motivated by positive influences upon their self-belief structures.

The Sources of Self-Efficacy in Education and Music

While expert pedagogues and school systems foster confidence and self-regulated learning in their students, misguided educational practices and ineffective teacher strategies can conversely lead to an “education in inefficacy” (Bandura, 1986, p. 417). The following sections include research addressing both the general educator’s and the music educator’s role in helping students develop beliefs of competence, and concurrently provide implications for teachers derived from those findings. Each section below is categorized according to the sources of self-efficacy.

Enactive Mastery Experience

The most reliable sources of efficacy information are typically accomplishments that we have experienced ourselves, for which we have “tangible” evidence of success (Bandura, 1997; Schunk & Usher, 2012). According to Bandura (1997), each success builds confidence, and, not surprisingly, each failure weakens it. However, a high sense of self-efficacy belief built on past successes can foster the determination necessary to persist in the face of setbacks. The difficulty of a task and the amount of effort required also contribute to a person’s sense of self-efficacy. The accomplishment of a minor or less-challenging task will not boost an individual’s sense of competence to the same extent as the accomplishment of a major or more demanding task. Finally, the way we choose to relive past experiences affects our perceived efficacy (Bandura, 1997). For example, a musician who chooses to remember negative or failed performances over positive or successful ones will likely underestimate performance capabilities.

Students who experience musical mastery persist in the face of difficulty. High-achieving music students have been found to experience more “flow” experiences than moderate musical achievers, where they meet musical challenges that match their skills

(Csikszentmihalyi, Rathunde, & Whalen, 1993). Similarly, O'Neill (1999) found that moderately-achieving students at a specialist music school reported fewer musical flow experiences than their high-achieving peers and cohorts at a non-specialist school. Music educators might, therefore consider finding alternative ways of encouraging students who are less musically able, including finding ways to balance challenge with skill.

Because efficacy beliefs develop as habits, music teachers can help students develop mastery over time by helping them prepare for and perform increasingly challenging tasks (McPherson & McCormick, 2006). This might include coaching them toward self-initiated and self-regulative activities that develop independence and academic self-sufficiency, and help students feel a sense of control over their own learning (see Zimmerman & Bandura, 1994; Zimmerman, Bonner, & Kovach, 1996). A part of self-regulation involves learning to make proximal goals in order to reach more distal ones (Bandura & Schunk, 1981; Zimmerman, 2000).

Some scholars have suggested that current music education practices are skewed toward an emphasis on the teaching and refinement of performance repertoire and techniques, with less opportunity for individual creativity (see Kenny & Gellerich, 2002; McPherson & Hendricks, 2010; Smith, 2014). Music educators might, therefore, consider encouraging enactive mastery experiences by providing opportunities where students exercise autonomy and control over their own learning (Deci & Ryan, 2010). This might include allowing students opportunities for self-expression and self-selection of activities and repertoire to promote a sense of contribution, accomplishment, and subsequent self-efficacy development (McPherson & McCormick, 1999; Renwick & McPherson, 2002).

Similarly, allowing students opportunities to help choose repertoire may also lead

to more cognitive engagement and practice efficiency (McPherson & McCormick, 1999; Renwick & McPherson, 2002). Not surprisingly, students with a high sense of self-efficacy may be better prepared to work and solve problems independently. According to Bandura (1986), “students who develop a strong sense of self-efficacy are well equipped to educate themselves when they have to rely on their own initiative” (p. 417).

According to Csikszentmihalyi’s (1990) well-known flow theory, people need increasing levels of challenge in order to keep at an optimal flow state; individuals feel enjoyment and reach peak performance when their level of skill matches the level of challenge at hand. If the amount of challenge exceeds skill level, one will experience anxiety, while if the amount of skill level exceeds the level of challenge, one will experience boredom. A point often overlooked in flow theory, however, is the potential difference between *perceptions* of ability and *actual* ability. An individual may have the skills necessary to meet a challenge at hand; however, if those skills are underestimated, anxiety may nevertheless result. This point illustrates the importance of teacher awareness of student self-efficacy perception in order to motivate students in realizing their full mastery potential.

Vicarious Experience

Norm-referencing and social comparison allow individuals to perceive their abilities in relation to the successes or failures of others. Observing others perform successfully can provide individuals with a sense of confidence in their ability to perform similar tasks (Bandura, 1997; Schunk, Hanson, & Cox, 1987). Vicarious experience is more effective when individuals recognize a common relationship between their abilities and the abilities of the model. Bandura (1997) stated, “The greater the assumed

similarity, the more persuasive are the models' successes and failures" (p. 87). This suggests, for instance, that a music student will likely have a greater boost in self-efficacy perception by observing another student of the same age, instrument, and/or ability level learn the same piece than by observing an adult or a student of a different age, instrument, and/or ability level learn some other piece.

Vicarious experiences are not typically as influential as are personal experiences (Bandura, 1997). However, in some cases the observation of a model can override the effect of enactive mastery experiences. For example, individuals who have been exposed to confidence-building models have been found to persist despite repeated failure (Brown & Inouye, 1978). Similarly, the attitude of a model can affect persistence: Zimmerman and Ringle (1981) found that elementary students who observed an optimistic model were found to be more persistent in unsolvable problem tasks than students who observed a pessimistic model.

The influence of vicarious experience upon self-efficacy perception is stronger in some situations than in others. An individual's personal assessment of task competence may be highly influenced in contexts that naturally involve a strong amount of comparative evaluation. For example, Bandura and Jourden (1991) found positive influences upon self-efficacy perceptions of individuals who were told they were progressively achieving at higher rates than their peers, and negative influences upon those who were told they were progressively declining in comparison to others. Vicarious experience has been found to be more negatively influential in situations where individuals have experienced repeated failure at a particular task or have had relatively little experience in the domain to be assessed (see Bandura, 1997).

While many students thrive in competitive environments, O'Neill & McPherson (2002) suggested that not all students are suited for learning situations in which they are compared with others. Students in socially-comparative environments have been found to study and learn reactively rather than planning and managing their academic experience (Zimmerman, Bonner, & Kovach, 1996). Musical environments in which individuals are ranked against each other have shown a negative influence upon self-efficacy perceptions from vicarious experiences, especially among females (Hendricks, 2014). Peer modeling opportunities should, therefore, be approached with care.

Verbal Persuasion

Verbal persuasion is often utilized by teachers simply out of ease and convenience (Bandura, 1977, 1997). Realistic self-affirmation and affirmation from others can boost efficacy perceptions. However, verbal persuasion may not be as powerful or effective as some might assume, especially when compliments are given loosely and without substantiation. Research studies in several domains have demonstrated the limitation of verbal persuasion that creates unfounded or unrealized expectations (see Bandura, 1977, 1997) or that focuses on ability rather than effort (Dweck, 2000; Mueller & Dweck, 1998).

Verbal feedback has been called the most often studied element of music teacher behavior (Duke, 2000; Duke & Henninger, 2002). While some music practitioners recommend that praise should accompany all instructive comments, other educational scholars propose that certain kinds of praise can actually be detrimental to student self-perception and growth (see Dweck, 2000; Mueller & Dweck, 1998). In two music education studies, Duke and Henninger found no significant difference between student

(1998) and independent observer (2002) perceptions of teachers who offered verbal praise, compared with those who did not. Duke and Henninger (2002) found that expert teachers were more likely to give frequent and specific feedback (both positive and negative) than non-experts, whose feedback was typically less frequent, more positive, less specific, and more often related to students' behavior than to task performance. These authors posited that it is not necessarily helpful to skirt around negative feedback, suggesting that a student may perceive these comments as proximal goal clarification, or a constructive means to help students progress. In a similar vein, positive feedback may not be deemed as helpful when it is less specific than negative feedback.

When helping others develop a high sense of self-efficacy, Bandura (1977) suggested that verbal persuasion is easy to accomplish but not as enduring or effective as providing opportunities with gradual increases of challenge and risk. Inappropriate, excessive, or superficial praise may be ineffective or even detrimental to a student's intrinsic motivation and performance progress (see Dweck, 2000). Praise can become meaningful and helpful when it is balanced, specific, genuine, and follows a performance that is truly praiseworthy (Pitts, Davidson, & McPherson, 2000).

Physiological and Affective States

Perceptions of ability are influenced by our awareness of the body's physical and emotional reactions to certain situations (Bandura, 1997). The experiences of strength versus strain, relaxation versus stress, energy versus fatigue, or elation versus depression can leave a student with a high or low perception, respectively, of the ability to persist in a task. Self-efficacy perception can be enhanced by the development of physical strength, reduction of stress, development of positive thought patterns, and improved mental

interpretation of bodily states (Cioffi, 1991). Physiological states are especially influential in tasks that require physical strength and stamina (Bandura, 1997). This might be especially important to consider in musical performance situations in which musicians are required to sing or perform on their instruments for extended periods.

Performance anxiety is especially common among instrumental musicians and can be debilitating (Kenny, 2011; McGrath, 2012; Wilson & Roland, 2002). In music, auditions have been found to be the most stressful kind of performance because they combine the pressures of adjudicator evaluation with social comparison (Wilson & Roland, 2002). In addition, externally-imposed perfectionism may exacerbate performance anxiety more than self-motivated perfectionism (Mor, Day, & Flett, 1995).

Anxiety leads to a lower sense of self-efficacy, yet self-efficacy can conversely be developed in order to reduce fears and anxieties about certain situations (Bandura, 1977). Music teachers might help students overcome fears by helping them monitor and challenge any inaccurate self-perceptions, since their self-beliefs may be a better predictor of achievement than the student's actual ability (Hackett & Betz, 1989). Instructional intervention in self-efficacy development, such as verbally encouraging students to set their own goals and monitor their own progress, can lead to improved performance, motivation, and efficacy reporting for future events (Zimmerman, 2000). Bandura (1986) wrote, "Educational practices should be gauged not only by the skills and knowledge they impart for present use but also by what they do to children's beliefs about their capabilities, which affects how they approach the future" (p. 417).

Teachers who pay attention to student perceptions may help students recognize and face their fears and limitations, including through self-regulation, self-evaluation,

time management, and other domain-specific approaches (Miksza, 2013; McPherson & Zimmerman, 2002). Students may experience frustration and subsequent loss of competence-related belief if they assume that improvement will be immediate; however, teachers can prevent frustration by encouraging students through proximal attainments. McPherson and McCormick (2006) stated:

Teachers can influence their student's self-beliefs about their own ability if they provide them with challenging tasks and meaningful activities to master, actively support and encourage them along the way, teach in ways that demonstrate that they believe in their students, and convey these impressions in ways aimed at developing a robust sense of self-confidence. (p. 337)

Conclusion

The literature cited above provides a basis of discussion regarding the environmental and social influences involved in a music student's development of self-efficacy beliefs. While it might be easy to delineate the four sources of self-efficacy into distinct categories for a theoretical discussion such as this, it is important in a practical sense to note that these sources are reciprocally influenced by one another and by other contextual and demographic factors as well. Furthermore, while the general construct of self-efficacy been studied across various ages and life stages, its particular observation in educational contexts has primarily taken place with school-age children, adolescents, and young adults. Further research is needed to investigate self-efficacy in early childhood and older adult learners, to determine how various life stages might influence the development of learning-related self-efficacy beliefs.

Other motivational constructs such as outcome expectations and values also

influence the robustness of self-efficacy beliefs (see O'Neill & McPherson, 2002; Schunk & Usher, 2012). For these reasons, Bandura (1997) cautioned, “generalizations about the relative power of different modes of efficacy influence must be qualified by the sway of interacting influences” (p. 88). While music educators cannot possibly control all of the influences affecting their students’ musical experiences, an awareness of the sources of self-efficacy may provide a means whereby teachers can make sense of the motivational processes at play in various music learning environments, thereby allowing them to tailor activities and strategies to better encourage and subsequently motivate their students.

Music teachers may be able to foster competence and confidence in their students by considering the four sources of self-efficacy. These four categories can be a starting point from which teachers can consider providing their students with proximal goals, peer and adult models, timely and constructive feedback, stress-reducing methods, and words of encouragement. Then, as these thoughts become action through a variety of educational strategies, students can gain independence and increased determination as they learn how to work more effectively and with confidence in their ability to achieve certain goals.

The purpose of this article has been to provide empirically tested and practically approachable solutions for those individuals who seek to motivate and empower musicians with competence- and confidence-boosting skills. Improvements will most likely take place gradually over time as educators become more aware of the role of self-efficacy in achievement, as well as the role of environmental influences upon self-efficacy. Music educators may benefit by investing time and energy in developing pedagogical strategies to encourage self-efficacy in their students. Doing so may provide

exponential educational returns as students become more independent, self-regulated, confident, determined, and consequently more successful.

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