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# The Impact of Self-Regulating Practice Strategies on the Achievement Perceptions of Sixth-Grade String Orchestra Students

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THE IMPACT OF SELF-REGULATING PRACTICE STRATEGIES  
ON THE ACHIEVEMENT PERCEPTIONS OF SIXTH-GRADE  
STRING ORCHESTRA STUDENTS

by

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Submitted in Partial Fulfillment of the Requirements

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## DEDICATION

This dissertation is dedicated to my family who have influenced and supported me throughout this journey. First, I want to recognize my parents, who instilled in me the importance of a good education and the value of being a lifelong learner. Although you are not physically here to see me finish this project, I know you would be proud. I would also like to thank my grown children, who never asked me why I wanted to go back to school so late in life and did not complain when I was unavailable because of schoolwork. Lastly, I want to dedicate this dissertation to my husband of 35 years, who encouraged me to make this dream a reality. Thank you for believing that I could do this and for giving me the time and space to finish the task.

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## ABSTRACT

The purpose of this study was to examine the impact of self-regulating strategies on the musical achievement perceptions of 8 6th-grade students in a beginning orchestra class. For the purposes of the study, musical achievement was measured using two parameters: (a) student self-reports of improvement and ability to effectively use self-regulating strategies and (b) teacher observations ascertaining improved class performance and student use of self-regulating strategies. During the Fall 2016 semester, students received instruction during class on goal setting, monitoring, and evaluating strategies that they were to incorporate during self-directed practice. Data were collected during pre- and postinterviews conducted in a semistructured format. Data were also collected from a pre- and postquestionnaire on self-regulating behaviors to determine any changes in student attitudes or beliefs about their ability to use self-regulating strategies. Student perceptions were recorded in student journals, and strategy use was recorded on a practice chart model developed by the teacher-researcher. The results of the study revealed students perceived an increase in their ability to plan, monitor, and evaluate their individual practice after receiving instruction during class on these strategies. The results of this study were used to develop an action plan in conjunction with the student-participants, which includes the ongoing incorporation of self-regulating strategies in the beginning strings curriculum to monitor and to regulate instrumental practice in an autonomous practice environment.

*Keywords:* metacognition, instrumental practice, self-regulation, instrumental music

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## LIST OF ABBREVIATIONS

NAfME .....National Association for Music Education

# CHAPTER ONE

## INTRODUCTION

The Core Music Standards developed by the National Association for Music Education (NAfME, 2014) advocate a three-pronged approach to music literacy, including creating, performing, and responding to music. The standards stress conceptual understanding throughout the various dimensions of music in which musicians actively engage (NAfME, 2014). Performance, as a fundamental dimension of music literacy, includes singing and instrumental opportunities. Many children participate in general music during the elementary school years, which encompasses singing and music theory concepts, based primarily in the context of rote learning (Chandler & Mizener, 2011). Often, children are first offered the opportunity to learn to play an instrument when they reach middle school as an embedded or cocurricular educational activity.

Learning to play an instrument is naturally a new experience for the novice student. Moreover, it is not uncommon for parents to also have limited or no instrumental music knowledge to support their child's experience (Ho, 2009). Unlike core classes (e.g., math, reading, writing, etc.) with which most parents are personally acquainted, learning to play an instrument is often unfamiliar in terms of expectations and challenges (Leenman, 2011). Beginning instrumental students encounter many new demands from determining where to rent or purchase an instrument to how to break down large musical goals into smaller and more manageable tasks (Crappell, 2013). These demands may also include learning to properly care for an instrument, transporting

the instrument to rehearsals, and perhaps most importantly in terms of improvement, learning to schedule and manage practice time for the instrument outside the classroom.

Ensuring that students develop the capacity to learn independently is particularly consequential for beginning instrumentalists since the majority of actual learning time is spent outside the direct supervision of the teacher (Roesler, 2017). As a precursor to improvement, instrumental students must embrace the concept and action of practicing as a vital and essential component in the development of technical expertise and musicianship (Hart, 2014). As Leon-Guerrero (2008) stated, “Practice is a fundamental expectation of every music lesson, whether it is as an individual or in a group. Similar to studying or completing homework, it is the musician’s way of self-learning outside of the classroom or rehearsal” (p. 91). Student apprehension or dread concerning practice may arise from the ubiquitous use of practice as simply a drill in which students must execute memorized steps or procedures. Marzano (2007) contended, however, that effective practice engages students “in high-level cognitive processes such as organizing, reviewing, rehearsing, summarizing, comparing, and contrasting” (p. 62).

In addition, instrumental teachers can help students develop effective practice habits by offering concrete instruction on how to generate improvement, which may include metacognitive and self-regulating concepts such as goal setting, monitoring, and self-evaluating in tandem with more instrument-specific skills (Hart, 2014). Suggesting that instrumental teachers may need to assist their students with the acquisition of effective practice skills, McPherson and Renwick (2001) concluded that “the majority of our learners possessed the will to learn their instrument, but not necessarily the level of skill required to ensure efficient and effective practice” (p. 184). Thus, the development

of metacognitive thinking and self-regulating behaviors in instrumental music students may promote the conceptual understanding necessary to raise skills to the level required for well-executed practice (Hart, 2014).

Furthermore, with an increased emphasis on growth measurement models as a means of educational reform, teaching students to analyze and synthesize music through metacognitive thinking and self-regulation may provide a strong foundation for musical growth as individual performers and as members of an ensemble. Marzano (2007) suggested that students must employ cognitive strategies to thoughtfully plan and execute meaningful practice, a form of procedural knowledge. Although instrumental teachers are trained in teacher education programs on how to teach instrument-specific playing techniques, few understand the necessity and importance of teaching metacognitive and self-regulating practice procedures in the beginning classroom setting, which arguably is the backbone of musical achievement in school programs (Hart, 2014). Underscoring their priority in the curriculum, the National Research Council (1999) concluded that the teaching of metacognitive competencies is best done in specific content areas since the ability to monitor cognition is related to domain-specific knowledge. By purposefully engaging students in the unique content music offers, music teachers can further student development of metacognitive abilities across the curriculum.

In terms of promoting achievement in musical performance, the development of learning objectives for growth model assessments is largely tied to a student's ability to personally apply pedagogical content. That is, as teachers establish learning objectives for their students, they must also provide the specific instruction, guidance, and pedagogical resources necessary to attain those goals. Wesolowski (2015) suggested,

“Music teachers intuitively give immediate feedback on student performance with great diagnostic power throughout the course of a given rehearsal” (p. 40). Through this back-and-forth interaction between music teacher and student, the teacher can gain a comprehensive picture of a student’s musical growth over a set period of time. To enhance and facilitate this musical growth in novice students, instrumental teachers can teach them to problem solve and reach learning objectives using self-regulating strategies such as planning, monitoring, and evaluating during autonomous practice time (Hart, 2014). As Eisner (2004) suggested, the

arts teach students to act and to judge in the absence of rule, to rely on feel, to pay attention to nuance, to act and appraise the consequences of one’s choices and to revise and then to make other choices. (p. 5)

In this setting, music may provide context for self-learning.

### **Statement of the Problem of Practice**

While we recognize the value of the teaching of arts, the teacher-researcher has observed a chronic lack of the use of self-regulating strategies in the strings classroom in her urban middle school in South Carolina. As an example, during the last 5 school years, practice charts have been used to assess student practice completed outside of class. These charts include spaces for students to write responses in terms of time practiced, number of measures practiced, and how measures were practiced. The teacher-researcher has observed that students are able to respond to how long they practiced and what measures they practiced but are *unable* to describe any process or strategy for how they practiced. Indeed, as pointed out by Crappell (2013), a significant part of the duties of music educators is to teach their students to practice efficiently and effectively. In this



study, therefore, the teacher-researcher explored how to promote more strategic practice by including instruction on specific self-regulating skills and guiding students to implement those skills in self-directed practice.

Therefore, more specifically, the identified problem of practice (PoP) for this study was framed in a sixth-grade beginning orchestra class where students appeared not to have the awareness to incorporate self-regulating practice strategies in their individual practice. Moreover, students demonstrated little or no improvement from day to day unless they were involved in direct instruction with the teacher. For example, when students were assigned time-oriented practice charts that included a section to complete on how they practiced, the teacher-researcher observed that students often reported that they played straight through their assigned music several times with no particular purpose or goal in mind. However, McPherson and Renwick (2001) suggested that if students possess the skills to implement deliberate practice, a term used “to describe goal-oriented, structured and effortful facets of practice in which motivation, resources and attention determine the amount and quality of practice undertaken” (p. 169), they will improve their musical proficiency.

In a search for a solution, the teacher-researcher designed an action research study to teach self-regulating practice strategies to eight student-participants who were beginning string players in a sixth-grade related arts class. During the study, the student-participants discussed, journaled, and recorded the implementation of self-regulating strategies on a practice chart and provided additional insight in semistructured interviews and by completing a self-regulation survey. This process required student-participants to identify goals, monitor implementation, and evaluate the use of strategies versus only

recording time practiced in order to determine if using self-regulating strategies could positively affect their perception of individual musical achievement during practice.

The PoP was also heavily influenced by an increasing influx of students who appeared to be academically underprepared in the teacher-researcher's school and for whom parent involvement and support was diminished and often absent, which is reflective of national trends. According to a report underwritten by the U.S. Department of Education, entitled *Parent and Family Involvement in Education* (Noel, Stark, & Redford, 2016), only 48% of parents with less than a high school education attended a school or class event in 2012. In homes where neither parent spoke English, only half of parents reported participation in a school event. The report further acknowledged that in households with incomes below the poverty threshold, only 60% of parents attended a school or class event (Noel et al., 2016).

Meanwhile, in research that included interviews with more than 250 parents of children participating in instrumental studies, students were much more likely to practice and continue music instruction if the parents demonstrated interest and support of music study (Sloboda, Davidson, Howe, & Moore, 1996). Although parent involvement is desirable, academic achievement must be attainable and accessible to students despite the potential lack of participation and engagement demonstrated by parents. In addition, there is a large percentage of students in South Carolina middle school instrumental programs who use school instruments and are unable to afford supplemental instruction, such as private music lessons, to boost achievement (Greenville County Schools, 2016).

Additionally, non-English-speaking parents may have limited knowledge about school music programs and see school in general as a “separate sphere with its own

language and procedures” that are distant and not particularly available for parents to approach (Vincent & Martin, 2002, p. 125). For these parents, it is difficult to integrate themselves into a special program they do not understand and may have few resources to support. Martinez (2011) stressed that the problem of many Latinx students’ failure to complete assignments is exacerbated by the fact that few Latinx students can turn to their parents for help. Students report that their parents do not have the educational background and/or content skills to assist with the completion of assignments (Martinez, 2011).

As a matter of indigenous influence, in dictatorial countries, an open conversation with school leadership is not only discouraged but has the potential to be dangerous. One Hispanic immigrant argued that asking a parent to help teach a child with schoolwork can be interpreted as incompetence on the school’s part (Fulwider, 1995). In this context, parents rely on their child to know how to practice and correct musical problems on his or her own because they cannot help if problems arise.

Whether parents are absent due to work obligations, uninvolved due to indigenous cultural boundaries, or unavailable due to a lack of content understanding, students, nevertheless, must be able to assume responsibility for musical achievement, which can be accomplished through the use of self-regulating strategies. The ability to monitor oneself and execute strategies to increase achievement may be an effective tool to empower all beginning instrumental students regardless of any existing cultural, ethnic, or socioeconomic factors (Parncutt & McPherson, 2002). Put simply, teachers can leverage the large amount of time that many children, including ethnic minorities and low-income children, spend in out-of-home settings in ways to teach and support their

self-regulation, which may in turn significantly advance their chances of academic success (Raver, 2012).

### **Research Question**

What impact do self-regulating strategies have on the musical achievement perceptions of eight sixth-grade students in a beginning orchestra class at Green Middle School? For the purposes of this study, musical achievement was measured using student-participant self-report data from interviews, journals, and a self-regulation questionnaire. Data were also included from the teacher-researcher's field notes, which provided information on the qualitative dynamic of what the teacher-researcher heard and saw in the classroom as compared to the student-participants' self-report data on achievement. More specifically, musical achievement in this study was measured using two parameters: (a) student-participant self-reports of individual improvement and ability to effectively use self-regulating strategies and (b) teacher observations of improved class performance and student-participant use of self-regulating strategies. For an explanation of *self-regulating* strategies as used in this study, see the Definitions of Terms section.

### **Purpose of the Study**

The purpose of this study was to examine the impact of self-regulating strategies on the musical achievement perceptions of eight sixth-grade students in a beginning orchestra class at Green Middle School.

### **Brief Overview of Methodology**

Action research positions the teacher-researcher as a change agent in his or her classroom for the purpose of social justice and educational reform, which uniquely distinguishes the position of such research in the educational setting (Dana & Yendol-

Hoppey, 2014). Although cyclical in nature, action research begins with a period of exploration and planning for the investigation into the topic. Mertler (2014) suggested, “The first crucial steps in any research study are to clearly identify the topic under investigation and to examine the existing research and any other related information associated with the topic” (p. 54). This phase of the action research cycle includes gathering relevant information and building a picture that describes and defines the important issues that are impacting the teaching environment.

During this phase, the teacher-researcher observed that it was difficult for her students to demonstrate improvement in class after completing time-oriented independent practice assignments. To address this problem, the teacher-researcher explored how to include self-regulating strategies into class instruction and how to develop a revised practice model for students to follow during individual practice. As a result, the teacher-researcher created an instructional unit on how to use self-regulating strategies, demonstrated appropriate use of self-regulating strategies during class, and modified the student-participants’ practice chart assignments to provide a model for them to follow during individual practice.

The implementation phase of the research plan occurred during the second 9-week grading period of the academic year in order to allow student-participants time to procure an instrument and to become acclimated to the structure and requirements of an instrumental class. In addition, district policies stipulate that no research may be conducted during the second semester due to the time constraints imposed by high-stakes testing. The first step of the research plan was to gather information about student-participants’ beliefs and perceptions relative to their ability to self-regulate. What

student-participants believed about their ability to monitor and correct their own action provided an important narrative as the teacher-researcher explored the individual abilities to apply self-regulating strategies in a class setting (Paris & Winograd, 2003). At the beginning of the 6-week research period, all student-participants completed a Self-Regulation Questionnaire to provide baseline information about students' perceptions related to self-regulating behaviors. In addition, all student-participants answered questions pertaining to their beliefs and perceptions about practicing their instruments in semistructured interviews. The interviews were repeated at the end of the study in order to identify any change in student-participants' responses.

During the first 2 weeks of the research/implementation period, student-participants submitted time-oriented practice journals. During the third and fourth weeks, the teacher-researcher provided instruction on self-regulating strategies to be used during individual practice. During Weeks 5 and 6, student-participants recorded strategies in their journals and discussed the application of each strategy in their music. All student-participants submitted revised practice records that detailed specific goals set, strategies used during practice, and how well they felt the strategies worked in correcting the problem. The practice charts also provided information on strategy preference and frequency of strategies used by the class.

The next phase of this action research cycle included an analysis of data from the self-regulation surveys and student interviews, which were both repeated at the end of the 6-week period. These data were examined alongside data gathered in the teacher-researcher's field notes and student-participant journals for emerging patterns and relevant trends throughout the data collection period. In some cases, data collected early

in the study were incorporated into the research plan. For example, student-participant responses on the initial survey raised additional awareness as to which self-regulating behaviors were perceived to be the weakest. Goal setting, monitoring, and reflection were three strategies identified by the student-participants as particularly difficult. Thus, these strategies became a focus of instruction and the revised practice chart developed by the teacher-researcher. All data were considered as to the effectiveness of teaching student-participants specific practice strategies. To illustrate, data indicated that student-participants more clearly understood the nuances of goal setting by journaling about specific practice goals described by the teacher-researcher; therefore, the teacher-researcher consistently included journaling in the development of future assignments throughout the study.

As an integral part of the action research cycle, the teacher-researcher developed an action plan to consistently include instruction on self-regulating strategies in the sixth-grade orchestra curriculum. In addition, the teacher-researcher shared the research findings with other strings teachers in the district during the annual All Arts Day professional development breakout sessions. The findings of the study were shared with district instrumental teachers so that they can help their students better understand how to effectively monitor individual practice. Lastly, the teacher-researcher has planned to develop the concepts explored in this study into a larger mixed-methods research plan to fully assess the impact on student learning when students are taught specific strategies to monitor independent practice. By replicating the research question in a larger, comparative context, the teacher-researcher may find additional support for the inclusion of practice strategies in the beginning instrumental classroom.

## **Significance of the Study**

As a district lead arts teacher, the teacher-researcher is well informed about specific challenges encountered with the implementation of a beginning instrumental program. Despite recent financial considerations at the district level that increased fixed-asset inventories, many district instrumental teachers continue to struggle with limitations on instructional resources and a lack of supportive administrators who continue to view the arts as nonessential. The importance of the PoP in such a context lies in the implications it has for all academic areas. The use of metacognitive and self-regulated learning strategies can support and undergird instruction while developing a community of self-directed learners in math, science, social studies, languages, and a plethora of other areas of study.

Self-regulation, a primary indicator of metacognition, is a learned skill that can provide differentiation of instruction because of its implicit nature. In other words, as Benton (2013) suggested, “The learner’s metacognitive self-awareness leads to selection and application of appropriate strategies that enable her to achieve success” (p. 54). By capitalizing on the extensive applications of a metacognitive learning environment, the teacher-researcher is prepared to use music as a platform to advocate and to support a more widespread use of self-regulating strategies throughout other academic areas in the curriculum based on their effectiveness in the beginning, sixth-grade instrumental classroom.

Furthermore, although there are many studies and publications designed to improve practice in more experienced and more mature players, there are relatively few studies that have explored the effect of integrating self-regulating practice strategies at



the beginning or novice level on musical achievement. Flavell (1979) and A. L. Brown (1978) suggested children from 5-16 years of age become increasingly aware of their own personal knowledge states, the features of tasks that influence learning, and their own strategies for monitoring learning. Thus, the student-participants in this research study were typical of the age spectrum referenced by the authors, and it was anticipated that they may benefit from instruction on self-regulation as they began to learn to play an instrument. In addition, the importance of this research is that it built on existing theories of music education in the context of an action research project to ascertain if beginning students can be encouraged to effectively monitor personal progress in instrumental practice by journaling, discussing, reflecting, and using self-regulating strategies.

A third, and perhaps most compelling, aspect that lends importance to this investigation is the intrinsic significance and positive effect that teaching self-regulation during practice can produce. Students who have positive and constructive experiences with making music are more likely to develop the belief that they are able to practice on their own and are responsible for the achievement resulting from practice (Crappell, 2013; Pintrich & DeGroot, 1990; Reimer, 1989; Weiner, 1985). More specifically, metacognition and its reflective nature encourages music students to understand the task requirements of a musical piece, identify potentially challenging material, select appropriate cognitive and physical strategies as needed by the individual, and effectively structure practice in the context of such factors (Bathgate, Sims-Knight, & Schunn, 2012). Benton (2013) asserted,

Through the use of instructional strategies that promote metacognition, music educators can increase students' cognitive engagement in music-making, help

students become lifelong music-makers by developing necessary thinking strategies for musical self-reliance, and teach thinking skills in the music classroom that will transfer to other disciplines. (p. 52)

### **Summary of the Findings**

The findings of the study indicate that students perceived an increased ability to self-regulate during autonomous practice when they received instruction on self-regulating strategies during class. Specifically, the results indicate that students perceived an increased awareness of strategies to enhance practice time, perceived an increased ability to effectively implement strategies, and finally, attributed success during practice to the use of self-regulating strategies. The findings support the inclusion of self-regulation in the beginning strings curriculum to guide and empower young musicians to take control of their individual practice efforts. In addition, the action plan developed from the findings of this study details how the findings will be shared with peer teachers and recommendations made to the district curriculum committee on the incorporation of self-regulating strategies in the formal district strings curriculum.

### **Limitations of the Study**

The study was limited in part by the small sample size ( $N = 8$ ) and the 6-week length of the research period. Therefore, it is evident that generalizations cannot be drawn from the results. Using a larger sample over an extended time period may have provided more in-depth information regarding student perceptions about the strengths and weaknesses of the new practice chart model, which probed more deeply into individual self-regulating behaviors.

## **Dissertation Overview**

Chapter One of the dissertation included contextual information that offered a narrative for the study and the accompanying research question. Chapter Two provides a review of germane literature focused on the topics of metacognition, self-regulated learning, and the teaching and use of self-regulated learning strategies. Chapter Three begins with a detailed report describing the setting and the methods used in this action research study. In addition, Chapter Three also describes the specific methodological approach taken for the study, including a biographical sketch by pseudonym of each student-participant in the study. After a brief introduction, Chapter Four describes the findings and interpretations of the action phase. Chapter Five includes implications of the study with recommendations for further research. In addition, Chapter Five includes an action plan for sharing the findings with the student-participants and for communicating results to other string teachers in the school district.

## **Definitions of Terms**

*Action research:* According to Mertler (2014),

Any systematic inquiry conducted by teachers, administrators, counselors, or others with a vested interest in the teaching and learning process or environment for the purposes of gathering information about how their particular schools operate, how they teach, and how their students learn. (p. 305)

*Instrumental music:* Music performed on a string, brass, woodwind, or percussion instrument as contrasted to singing.

*Isolation, repetition, and integration (chunking):* The procedure for identifying difficult musical material, reducing the material to very small sections, repeating it until

improved, and then reintroducing it into the larger musical work for the purpose of overall improvement (Kaplan, 2004).

*Metacognition*: “Thinking about . . . thinking. More precisely, it refers to the processes used to plan, monitor, and assess one’s understanding and performance. Metacognition includes a critical awareness of a) one’s thinking and learning and b) oneself as a thinker and learner” (Chick, 2016, para. 1).

*Metronome*: Device or application used to designate a specific tempo.

*Modeling*: Providing a teacher or student performance example for students to observe and emulate (Parncutt & McPherson, 2002).

*Musical achievement*: For the present study, students’ perceptions of increased ability to more effectively plan, monitor, and evaluate individual practice time.

*Practice*: The act of rehearsing music with the goal of improved performance and technical proficiency (Parncutt & McPherson, 2002).

*Self-efficacy*: An individual’s belief in his or her capacity to implement behaviors that are necessary to generate specific performance achievements. A self-assessment of how good one is at something (Parncutt & McPherson, 2002).

*Self-regulating practice strategy*: An intentional action completed during musical practice to monitor and increase the effectiveness and efficiency of the action of practicing (McPherson & McCormick, 1999).

*Self-regulation*: An important skill that underlies mindful, intentional, and thoughtful behaviors in students. Self-regulation is characterized by the ability to assess and correct issues in individual behavior, which may include setting goals, monitoring progress, and evaluating individual performance (McPherson & McCormick, 1999).

*Simplification (in musical practice)*: The act of extracting a musical or technical element from a composition to practice only that concept. Simplification may include altering musical aspects such as tempo change, rhythm removal, identifying better fingerings, fingering without sound, and augmentation of rhythmic patterns (Kaplan, 2004).

## **CHAPTER TWO**

### **REVIEW OF LITERATURE**

The literature that focuses on beginning instrumental practice forms a distinct field of scholarship within the wider body of instrumental music research. In addition, the literature that addresses self-regulation in music has much in common with literature from other academic disciplines that also incorporate student self-regulation as demonstrated in behaviors such as goal setting, monitoring, and evaluating progress. The review begins with a brief overview of prevailing philosophical foundations in music education research. Following this overview is a discussion of metacognition as an important aspect of learning and how it is considered in the literature as it relates to middle school students.

Following this discussion, several associated themes are explored that influence the importance of practice and the teaching of self-regulating practice techniques to beginning instrumental students. In order of discussion, these themes include a general summary of current musical practice discourse, metacognition and self-regulation in music learning, self-regulation in musical practice, and related theories of learning that impact research on self-regulating practice. The importance of teaching self-regulating strategies to students in the beginning instrumental classroom is discussed at the conclusion of the literature review.

## **Philosophical Theories of Music Education**

Various theories prevail in the domain of research on music education, which in turn affect any study of musical practice. Drawing from both cognitive and behavioral learning psychological theories developed outside the field, music researchers have tried to describe and explain events in musical learning and performance (Taetle & Cutietta, 2002). Encompassing both Gestalt and association theory, types of learning can be comprehended in a hierarchical order from perceptual to complex conceptual learning (Gagné, 1965). With respect to music education, Gordon (1971) posited, “In music education, as in other disciplines, emphasis is generally put upon the first four types of learning . . . and as a result students develop perceptual understanding about music predominantly by rote and rarely engage in conceptual pursuits” (p. 59). Furthermore, he found that students may fail to develop conceptual learning in music because teachers do not have the necessary expertise to facilitate conceptual development (Gordon, 1971).

Bruner (1960) laid the foundation for this challenge when he stressed the teacher’s role in facilitating students’ going beyond perceptual learning to conceptual learning. He found that “if earlier learning is to render later learning easier, it must do so by providing a general picture in terms of which relations between things encountered earlier and later are made as clear as possible” (Bruner, 1960, p. 12). Thus, in order to facilitate a clear understanding of moving from perceptual to conceptual learning, Hart (2014) suggested that the application of metacognitive strategies may offer students a framework to achieve this goal through planning, monitoring, reflection, and other self-regulating behaviors. For this reason, the philosophical theories proposed by Bruner (1960) and Gordon (1971) support the inclusion of self-regulating strategies in beginning

instrumental music as an appropriate device to encourage and to sustain conceptual thinking in novice students.

During the last 30 years, recognized music theorist Bennett Reimer and his protégé, David Elliott, promoted distinct philosophies of musical performance and music education that continue to strongly influence the discourse in Western music (Daugherty, 1996). As an explicit concept since the late 1950s, Reimer (1989) proposed music as the cornerstone of an aesthetic education with its primary purpose “to help people gain access to the experiences of feelings contained in the artistic qualities of things” (p. 53). Aesthetic education philosophies have maintained popularity as music educators continue to work to solidify the status of the arts in school curricula as a core subject. Underpinning this position, Reimer contended that music is a basic manner of reasoning that can be differentiated “from other cognitive processes by its nonconceptual, nondiscursive qualities” (as cited in Daugherty, 1996, para. 3). In other words, Reimer (1989) found that music provided unique aesthetic qualities to promote cognitive rigor.

Secondly, Reimer (1989) explored the aesthetic experience in which the value of artistic experiences lies in their capacity to bring richness and depth into people’s lives. The unique reactions and particular interests that each person brings to the musical experience largely determine the degree to which an individual is captivated by or absorbed in the aesthetic qualities of the musical experience (Radocy & Boyle, 2012). In addition, participation or motive in the arts typically arises from the aesthetic satisfaction uniquely discovered by interacting with the work itself (Eisner, 2004). Teaching students to monitor musical processes by employing cognitive strategies for thinking, comprehending, and remembering provides a powerful tool to promote aesthetic learning;



therefore, students are more likely to fully participate and engage in practice if what they experience during practice sessions is successful and provides a rich and meaningful interaction with the music being studied (Joseph, 2010). To this end, teacher-initiated practice assignments should be made with this goal in mind.

In contrast to Reimer's promotion of music as part of an aesthetic education, Elliott (2012) advocated a praxial philosophy in music education largely based on musicianship and performance. Despite authoring his doctoral studies under Reimer, Elliott did not advocate music for merely an aesthetic purpose but proposed music education and performance as sources of social responsibility in a diverse population as follows:

1. Music-making for intrinsic musical experience is a key aim of music education, but it is not enough. We should also prepare students to “put their music to work” for the betterment of other people's lives and social well-being.
2. Music educators should help students conceive and practice “music making as ethical action” for social justice.
3. We should aim to infuse school music with an “of care”—care for oneself and for the health of our social communities. (p. 22)

Elliott constructed his praxial philosophy on the premise of the improvement of the human condition through purposeful and ethical music making to address and engage larger social themes and develop what he called “an artistic citizenship” (p. 21).

Applications from the praxial philosophy were important to this present research as well. Students can benefit from the pursuit of excellence in their musicianship and can

benefit from learning the extrinsic responsibilities of musical performance in individual practice. Elliott (2012) also suggested that the development of social responsibility within the context of producing music provides a viable framework for musical improvement and mastery in performance. Social responsibility, in this context, can include individual membership obligations as a participant of a class or ensemble, such as preparation through individual practice, or can pertain to equal access in providing opportunities for learning a musical instrument for those students who may have difficulties procuring an instrument due to disadvantaged circumstances (Elliott, 2012). Thus, intrinsic motivation is coupled with external influences to impact improvement in the practice room.

### **Metacognition**

During the past 3 decades, there have been numerous studies on the positive effects of self-reflection during learning to promote increased academic achievement and individual cognitive and memory development (Joseph, 2010; Sperling, Richmond, Ramsay, & Klapp, 2012). The majority of metacognition research is rooted in theoretical frameworks acknowledging links to cognition and the importance of strategy implementation (A. L. Brown, 1978; Flavell, 1979). Both Vygotsky (1896–1934) and Piaget (1896–1980) included elements of what came to be known as metacognitive thinking in their theories of children’s thinking (Hammond, Austin, Orcutt, & Rosso, 2001).

Building on the work of Vygotsky and Piaget, A. L. Brown (1978) focused his framework on knowledge and comprehension of cognition whereas Flavell (1979) underscored the person, strategy, and task elements of metacognitive knowledge, goals,

and strategies. Despite differing perspectives on distinct components of the metacognitive process, both authors recognized the “(a) importance of . . . an individual’s cognition, (b) the contextualized nature of metacognition, and (c) the importance of metacognition for regulation of an individual’s thinking and actions” (Sperling et al., 2012, p. 2).

Implications related to the use of metacognitive strategies indicate that students who are unable to analyze and adjust their approach to learning tasks typically demonstrate ineffective learning strategies whereas students who practice metacognition employ strategies to plan, regulate, and assess their learning (Joseph, 2010; Spruce & Bol, 2015). Moreover, Eisner (2004) stressed the importance of teaching students to judge, to pay more attention to nuance, “to act and appraise the consequences of one’s choices and to revise and then to make other choices” (p. 6), which are primary indicators of metacognitive behavior. As an important consideration for this study, metacognition is also important to personality development and social learning, which suggests that middle school students who use suitably focused metacognitive strategies can increase practical intelligence and effectively analyze the use of learning strategies for improvement (Joseph, 2010; Sperling et al., 2012).

To the extent that teachers can encourage student metacognition, Roesler (2017) explored teacher behaviors and their effect on learner problem solving in the classroom. Problem solving is a skill that must be fostered in all types of learners including minority and high-achieving students. Roesler contended that goals are meaningful to the extent that students can progress when they work on their own apart from the guidance of their teacher. The author also suggested that

by observing as students engage in various aspects of problem solving and make meaningful contributions to their own progress during instructional time, teachers can observe learners' problem-solving effectiveness and potentially guide learners' development of this critical skill, thereby influencing their independent practice. (Roesler, 2017, p. 457)

Roesler observed teacher behaviors that preceded learners' active participation in problem solving to include varying specificity of directives, varying specificity of feedback, conceiving, demonstrating contrasting options, stating principles, asking questions that invite practice of problem-solving skills, and deliberately refraining from solving the problem for learners. One of the most important observations in this research was that learners tended to exercise more problem-solving behaviors as the teacher did less for them (Roesler, 2017). Thus, it may appear that once students learn skills in metacognitive thinking, they become less reliant on directives from the teacher to problem solve, which supports the inclusion of teaching self-regulating strategies throughout the curriculum.

Therefore, given the extensive findings that support metacognition in learning, it would seem only natural that more teachers would incorporate metacognitive strategies in their teaching. Teachers' perceptions indicate that metacognition, as operationalized in self-regulated learning, is a valuable asset in all content areas; however, teachers indicate reservations as to whether students are able to successfully self-regulate at the middle school level (Spruce & Bol, 2015). Sperling et al. (2012) suggested that it may be difficult for teachers to separate achievement from self-regulation due to the inherent difficulty of observing metacognitive behaviors. Although in some instances, teachers

self-report the use of self-regulating strategies during instruction, there exist discrepancies between espoused student-centered goals and observed teaching practices (Spruce & Bol, 2015).

To that end, teachers are encouraged to recognize that metacognition may be underutilized in the classroom because typical instruction focuses on content versus methods used to learn content (Joseph, 2010). Reflective thinking, however, can help teachers develop a better understanding of their students and how they learn. According to Joseph (2010), “The awareness of how students learn enables teachers to better focus the instruction and make better use of class time” (p. 100). Metacognition, in the final analysis, is characterized by an awareness of one’s thinking and an ability to monitor cognition; therefore, teachers must experience, construct, and discuss these processes in order to understand how to nurture the same development among students (Paris & Winograd, 2003).

### **Practice in Music**

Whether student practice can be regulated or enforced, or if it is even beneficial, are frequently explored questions among music teachers. Mosing, Madison, Pedersen, Kuja-Halkola, and Ullen (2014) found, “There is general agreement that long-term deliberate practice is necessary for high levels of expert performance” (p. 1795). Current research trends suggest that not only is practice an essential component of musical development, but it is also a significant part of students’ musical development from beginner to expert and that metacognition is critical to developing practice skills (Hart, 2014). Furthermore, music students frequently require the assistance of music educators in order to learn metacognitive skills and how they can impact important facets of

practice including practice time, length, structure, and organization. Put another way, “To improve skill on a musical instrument, practice—musical study—would appear to be a concept students could easily understand” (Schatt, 2011, p. 30).

In the discussion of musical practice, it is important to acknowledge that student aptitude, intrinsic motivation, genetics, and attitude may all influence a student’s capacity to execute practice (Joseph, 2010). Ultimately, however, the responsibility of teaching strategies for productive practice lies with music educators, who, at present, demonstrate little to no unified structure in how to accomplish this task (Hart, 2014). Therefore, as Hart (2014) stated, “It stands to reason then, that as more educators are looking for ways to enhance students’ practice quality, they should use an approach founded on current research” (p. 58). More than ever, students of today need to be convinced that learning complex and difficult music is possible and is well worth the effort. Offering support and advocacy for purposeful and cognitively based practice, Eisner (2004) asserted,

Motives tend to be secured from the aesthetic satisfaction that the work itself makes possible. A part of these satisfactions is related to the challenge that the work presents; materials resist the maker, they have to be crafted and this requires an intense focus on the modulation of forms as they emerge in a material being processed. (p. 9)

In such an educational environment, self-regulation, as an indicator of metacognition, may provide the mechanism to process and wrestle with the material in an authentic context.

Conversely, Mosing et al. (2014) argued that practice is not always a causal factor in musical achievement. Based on their research using sets of identical twins, results

indicated that musical achievement was influenced more by heredity than amount of practice. In the study, however, musical achievement was measured solely in a sensory capacity such as pitch discrimination and rhythmic ability. Results may have differed dramatically with the consideration of fine motor skills, memorization, and theoretical skills such as score reading. The authors acknowledged that a strong correlation between practice and musical achievement does exist, but they did not conclude that practice alone is the primary indicator of musical achievement. The scope of the study did not include teacher instruction on metacognitive or self-regulating practice strategies but did bring the relevant *nature versus nurture* aspect of music into the discussion (Mosing et al., 2014).

### **Metacognition and Self-Regulated Learning in Music**

The focus on self-regulating strategies and metacognition for middle school students learning to play an instrument is particularly important. Bandura (1986) emphasized that self-regulation involves three interrelated processes: self-observation, self-evaluation, and self-reaction; understanding these processes and using them deliberately is the metacognitive part of self-regulated learning. Brain studies and research in children have underscored the absolute importance of the early years in childhood for brain development (Levitin, 2006). That is, all stimuli of an enhanced environment promote the growth of connections (synapses) between neurons and help to develop a neuronal network (Levitin, 2006).

This synapse network helps the brain to connect across different areas through the network's highly specialized power of processing one single aspect and, therefore, to establish an interconnected representation of the incoming information, single aspects of

which are processed separately in different parts of the brain (Gruhn, 2002; Levitin, 2006). In addition to capitalizing on one of the most productive periods of human cognitive development, it is essential to understand the overarching influence of metacognitive thinking in that “such self-guided instruction is especially important for beginning and intermediate musicians because early phases of learning are crucial to the development of fundamental skills and proficiencies that may guide future music success” (Miksza, 2012, p. 324).

According to McClelland and Wanless (2015), emerging data suggest that the development of self-regulation skills may also be contextually specific. In other words, experiences, values, and expectations differ across contexts and cultures; therefore, one must study the people and indigenous influences in a given situation in order to determine the prevalence or absence of symbiotic variables. The authors asserted, “Given the importance of self-regulation for children’s academic success, it is especially important to identify factors that influence self-regulation development in different cultural contexts” (McClelland & Wanless, 2015, p. 609). In order to develop a more fully informed perspective on self-regulation in a cultural context, the authors referenced research focused on (a) the growth of self-regulation in a variety of cultural settings, (b) stimuli and results of self-regulation, (c) various approaches to measures and methods, and (d) mediation efforts to advance self-regulating skills (McClelland & Wanless, 2015). In the end, the findings clearly reach across cultural and geographic boundaries in the discussion of self-regulation and its importance in children’s academic success.

The importance of this research is that it is part of a rapidly growing body of literature relating cultural or ethnic context to self-regulation. Since the development of



self-regulation is considered impressionable in most literature, external influences including cultural aspects are important in the development of a full understanding of how self-regulation can be encouraged and developed (McClelland & Wanless, 2015). Thus, music learning is a natural medium for teaching self-regulating behaviors as it crosses and embraces a variety of cultural contexts in its content.

### **Metacognition in Musical Practice**

Historically, music education curricula have defined only performance objectives as a means to assess musical achievement (Leon-Guerrero, 2008). The ability of students to self-assess and be aware of their cognitive state is a dimension of music instruction that has often been overlooked (Hart, 2014; Leon-Guerrero, 2008). Barry and Hallum (2002) argued that beginning students have not developed sufficient aural schemata to identify errors during musical practice. However, little knowledge is available about how beginning students make decisions related to goal setting, strategy use, and self-evaluation, which are all rooted in metacognitive behaviors (Oare, 2012). Oare (2012) suggested that the inclusion of metacognitive strategies in the orchestra curriculum may assist novice students with the establishment of consistent practice habits, the development of effective practice routines, and cognitive engagement. Lastly, teachers are an important model for students and can encourage metacognition as an emerging component of productive practice strategies to be utilized outside of class (Crappell, 2013; Hart, 2014).

Unfortunately, there is minimal evidence to suggest that music educators are teaching students to use metacognitive thinking in their own practice (Hart, 2014). Despite present cultural influences in which students value the instant delivery of

information on a personal device, it is vital that music educators help their students develop an appreciation for practice that is both methodical and careful despite the fact that most students do not typically enjoy this type of task (Crappell, 2013). Moreover, Crappell (2013) advocated assigning specific practice strategies versus time slots, which he contended yield less-than-desirable results.

In addition, it is important for children to understand what they do know and what they do not know to be able to self-assess throughout the practice process. Yet, students are seldom provided guidance on how to approach an individual practice session so that they can experience success and maximize their playing potential (Leon-Guerrero, 2008). There is also minimal evidence to suggest that students independently use metacognitive strategies once they receive instruction on them (Hart, 2014). This indicates that it may be beneficial for instrumental music teachers to examine student self-report data about the frequency and type of self-regulating strategies used by students, particularly during the beginning stages of learning to play an instrument, to determine how to more effectively empower and monitor the use of such strategies (McPherson, 2005).

The development of self-regulating and metacognitive strategies in learning has many advocates. A large number of practitioners in music as well as sports and academics believe self-regulation and metacognition to be essential components in the acquisition of skills/knowledge (Austin & Berg, 2006; Hart, 2014; Miksza, 2012). Despite high prioritization, Hart (2014) suggested that very few music educators actually employ any formal structure in the teaching of such strategies. Most teachers prod students to practice, and although they commend the highly disciplinary nature of

practice itself, many teachers fail to adequately address the implicit complexity of cognitive processes involved in effective musical practice (Austin & Berg, 2006).

It is often recognized that although expert musicians monitor and employ a large variety of self-regulating and metacognitive strategies, less proficient musicians demonstrate far fewer such strategies (Hart, 2014; McPherson & Renwick, 2001). This raises the question of what effect motivation might have on developing students. Hart (2014) suggested that despite other factors, musicians who employ a metacognitive approach to music are able to learn more material at a faster pace than those who do not. Roesler (2017) noted, “To the extent that students depend on their teachers, they are limited in their ability to develop the skills and thinking required for successful music-making” (p. 454). For this reason, it is important that teachers of beginning instrumentalists understand, teach, and monitor the use of self-regulating strategies in their students to empower independent learning and achievement.

### **Metacognitive Theories**

Metacognitive and self-regulating strategies are framed in multiple foundational theories that include attribution theory and self-regulated learning theory. These two theories are discussed through the lens of how they support the use of metacognition and self-regulating strategies in the educational classroom to promote achievement. The present review is focused on theoretical investigations relevant to beginning instrumental students in middle school.

#### **Attribution Theory**

Self-efficacy—a learner’s perception of his or her capacity to achieve a specific task—is strongly linked to a learner’s attributions to success or failure in achieving a

task. According to Weiner (1985), there exists a strong relationship between student achievement and self-concept. Closely associated with the concept of motivation and self-regulation, attribution theory accounts for reasons that students may give for their success or failure in specific tasks such as practicing. Attribution is a three-step process whereby behavior is observed, behavior is determined to be intentional, and behavior is attributed to internal or external causes. For example, student achievement can be attributed to four possible factors: (a) effort, (b) ability, (c) level of task difficulty, and (d) luck (Weiner, 1985, p. 550).

Attribution theory has been used to explain the difference in motivation between students demonstrating high achievement and their low-achieving counterparts. Weiner (1985) asserted that attributions are viewed as either stable (ability, task difficulty) or unstable (effort, luck) and indicate whether the reason for success or failure is extrinsic (originating from outside a person) or intrinsic (originating within a person) in nature. The causal dimensions of attribution include locus of control, stability, and controllability (Weiner, 1985).

Research influenced by Weiner's theory includes a study by Schatt (2011) that investigated 218 band students' perceptions about musical practice. Results of this study indicated that internal attributions of ability and effort were rated the highest of all belief areas whereas external attributions of task difficulty and luck were rated lowest. Data from this study also suggested that students may feel that they are capable of superior musical achievement if they apply more effort during personal practice (Schatt, 2011). Thus, student perceptions of results in their practice time may be influenced to the degree

that students believe they expend effort, which may be cultivated through the use of self-regulating behaviors.

Schunk (1996) expanded the context of attribution theory to include self-regulatory behavior. Schunk stated, “Effective self-regulation depends on students making attributions that enhance self-efficacy and motivation. Attributions enter into self-regulation during the self-judgment and self-reaction stages when students compare and evaluate their performances” (p. 10). Drawing from this viewpoint in Weiner’s model, “students who attribute causation to internal, changeable, and controllable methods of learning should be more motivated to continue to self-regulate their efforts to learn” (Zimmerman & Schunk, 2011, p. 55). Student self-perceptions meaningfully contribute to the development of self-regulating behaviors and the perceived ability to attain objectives (Weiner, 1985).

### **Self-Regulated Learning Theory**

Self-regulated learning involves multiple constructs and lends itself to multiple interpretations based on educational philosophy (McMahon & Luca, 2001). Implicit in this framework is the construct of self-awareness, which serves as a vital enabling mechanism in the development of self-regulating strategies (McMahon & Luca, 2001; Zimmerman, 1990). As an example, students who possess a high capability to self-regulate demonstrate the ability to set learning goals for themselves, implement successful learning strategies, monitor and assess goals, seek assistance when and if needed, and take responsibility for their learning environment when necessary (McPherson & McCormick, 1999; Schunk & Zimmerman, 2007). An important characteristic of self-regulated theory is that self-awareness, motivation, and student

learning are considered symbiotic variables that cannot be completely understood apart from each other (Zimmerman, 1990). Inextricably linked, student-learning stems from motivation, and motivation encourages student learning with self-awareness as an overarching influence.

In their dual comparative studies, Evans and Rosenbaum (2008) hypothesized that deficits in self-regulation skills, beginning in early childhood, also contribute to the income-achievement gap. Success in school depends on more than cognitive skill acquisition, including the development of self-regulation skills. The authors examined whether self-regulation skills mediate the income-achievement gap with two different data sets, which included (a) a small sample of rural White children and (b) a considerably larger and ethnically diverse national sample of students. The results, replicated across two different data sets, indicated that self-regulation may mediate the probable relationship between family income and youth's cognitive development. That is, the authors suggested that either more must be done to mitigate early influences that make the development of self-regulating skills difficult or interventions must be devised to help these students increase their ability to self-regulate (Evans & Rosenbaum, 2008). The importance of this research is that it brought attention to the development of self-regulating skills in young students and demonstrated the benefit and effectiveness of these skills as documented in a longitudinal study.

In terms of instrumental practice, two aspects of self-regulation appear to have a strong influence on actual performance ability: (a) Cognitive strategies that students employ result in higher levels of cognitive engagement, and (b) students' ability to manage their own learning environment also increases cognitive engagement (McPherson

& McCormick, 1999). It is also plausible that achievement is directly affected by deliberate or formal practice, but there exist considerable differences between the ways experienced musicians and inexperienced musicians implement self-regulating strategies (Cremaschi, 2012; Hart, 2014; McPherson & McCormick, 1999). As an example, students preparing for a performance music exam demonstrate a high level of cognitive engagement while practicing, and as a result, they not only practice more but are also more efficient with their learning (McPherson & McCormick, 1999). It is important to consider, however, that studies have suggested knowledge of self-regulating strategies is not always an isolated indicator that students will employ strategies in either an academic or a musical setting (Hart, 2014; McPherson & McCormick, 1999; Pintrich & DeGroot, 1990).

### **Teaching Self-Regulated Learning**

According to Zimmerman (1990), “A self-regulated learning perspective on students’ learning and achievement is not only distinctive, but it has profound implications for the way teachers should interact with students and the manner in which schools should be organized” (p. 4). The development and implementation of self-regulating strategies is particularly important in the beginning instrumental music classroom because seldom are students asked to explain their musical understanding or personal reaction to repertoire, much less articulate how they are able to perform an excerpt at a particular level of proficiency (Leon-Guerrero, 2008). In the present era of problem-based learning, students across all academic areas are being asked to explain their understanding and demonstrate successful thinking skills (Roesler, 2017). Thus,

self-regulation skills can enable students to demonstrate the critical thinking required in the current school environment.

McPherson and McCormick (1999) suggested that examining the level of cognitive focus in musical practice may provide important information in the quest to improve practice and refine a student's overall musicianship. Information is inconclusive on the amount and specificity of actual teaching of metacognitive strategies although it is possible that educators are teaching such strategies to a greater extent than literature suggests (Hart, 2014). Music teachers can encourage students to consciously reflect on learning before, during, and after practice, thus providing the foundation for metacognitive thinking. Instructional strategies using goal setting, think-aloud sessions, self-assessment, and self-monitoring provide rich environments for the development of metacognitive behaviors in middle school instrumental students (Benton, 2013; McPherson & McCormick, 1999). As a result, music educators who consistently teach the use of metacognitive strategies in the classroom should see and hear improvement in both playing ability and self-regulation (Hart, 2014).

In addition, the use of self-regulating and metacognitive strategies suggests that metacognition is a way to inform student practice, assist students in planning, track practice effectiveness, and evaluate how much measurable learning takes place during a practice session (Hart, 2014). Evidence also suggests that more investigation be conducted to ascertain the range of cognitive processes and self-regulating strategies that may influence and affect achievement in music performance (McPherson & McCormick, 1999). With current curricular initiatives that focus on problem solving and problem-based learning, it is prudent to recognize that students are limited in their ability to



develop critical thinking skills to the extent that they depend on their teachers (Roesler, 2017). In sum, conclusions from current research suggest that beginning, middle school-aged, instrumental students can benefit from educator-guided and designed practice methods using metacognitive strategies in an autonomous environment (Benton, 2013; Crappell, 2013; Hart, 2014; Roesler, 2017).

Student self-regulating practice strategies are dependent on six dimensions that McPherson and Renwick (2001) outlined as follows:

1. *Motive*—feeling free to and capable of deciding whether to practice.
2. *Method*—planning and employing suitable strategies when practicing.
3. *Time*—consistency of practice and time management.
4. *Performance outcomes*—monitoring, evaluating and controlling performance.
5. *Physical environment*—structuring the practice environment (e.g. away from distractions).
6. *Social factors*—actively seeking information that might assist (e.g. from another family member, teacher, practice diary or method book). (pp. 170-171)

During a 3-year longitudinal study focused on young children's practice, McPherson and Renwick recorded data collected through videotaped student practice and detailed student and parent interviews. Although the data overwhelmingly indicated that it takes years for children to integrate the types of practice strategies that lead to effective self-regulation, there are strategies teachers can teach to facilitate strategy development. Students typically played pieces straight through without direct attention to problematic material. Several students demonstrated the use of body movements such as foot tapping, counting,

inspecting the music, singing, and fingering, but the use of these strategies appeared negligible at barely 25% of total practice time (McPherson & Renwick, 2001).

### **In Summary**

This summary of related literature includes research applicable to the use and teaching of self-regulating strategies with middle school students. It further underscores the potential benefits and importance of using metacognitive strategies in the instrumental classroom with beginning students, many of whom require teacher assistance and instruction to learn how to self-regulate. According to Schatt (2011), “It would appear to be in the instrumental educator’s best interests to determine whether students view practice as a necessary requirement for musical growth or as a tedious activity more aligned with a chore” (p. 31). Also, if teachers depend on student practice for the development of skills essential for mastery performance, the quality of the student practice merits examination (Colprit, 2000). With this focus in mind, teachers of beginning instrumental students must understand how effective practice strategies can be thoughtfully integrated into class instruction so that students will see them as a natural extension of the course content and a worthy goal in their musical pursuits.

By understanding how students view and implement self-regulating practice, music educators can better create a meaningful plan to motivate and inspire young musicians through practice. Although many young musicians are well-intentioned in their desire to improve, many times this desire does not meaningfully translate into any appreciable improvement during the course of self-directed practice. To this end, the review of the literature supports inquiry as to why some students typically do not possess the innate ability to implement self-regulating strategies. Thus, they require teacher

instruction such as modeling the correct sound/technique, developing mental scripts to guide practice, setting achievement goals for each practice session, and reflecting on potential problems in the music in order to increase personal musical achievement through individual practice (McPherson & Renwick, 2001).

## CHAPTER THREE

### METHODOLOGY

The identified PoP for the study was that sixth-grade beginning orchestra students appeared not to have the awareness to incorporate self-regulating practice strategies in their individual practice. Using action research methods, the teacher-researcher explored what impact self-regulating practice strategies had on the musical achievement level of eight students in a beginning string orchestra class. By investigating the PoP in her own classroom through action research, the teacher-researcher was better prepared to address the unique challenges and demands within the class and implement strategic change to benefit student learning. To that end, the purpose of this study was to examine the impact of self-regulating strategies on the musical achievement perceptions of eight sixth-grade students in a beginning orchestra class at Green Middle School.

Action research utilizes a cyclical strategy of steps designed to address a specific problem in a classroom, school, or school community. Existing music education action research covers a broad spectrum of music topics; however, research focusing on self-regulation in the classroom is limited (Cain, 2008). With consideration given to this constraint in the related literature, the complexity and depth of the concepts involved in teaching students how to monitor their own practice to promote musical achievement are significant. Self-regulating behaviors encompass multiple constructs including, but not limited to, cognition, motivation, self-awareness, and self-control of behaviors (McMahon & Luca, 2001). NAFME (2014) included numerous processes in its standards

for musical achievement, such as creating, performing, analyzing, composing, and interpreting. Thus, the association between self-regulation and musical achievement provided the focus for this investigation.

The overarching question that guided the research was to what extent the teaching of self-regulating strategies affects students' achievement perceptions in a beginning instrumental music class. It was hypothesized that musical achievement would be positively impacted as a result of the implementation of the self-regulating strategies during individual student practice. For the purposes of the study, musical achievement was measured using two parameters: (a) student self-reports of improvement and ability to effectively use self-regulating strategies and (b) teacher observations of improved class performance and student use of self-regulating strategies. Effective use of self-regulating strategies was also evidenced by an increase in students' ability to set goals, monitor successful practice strategies, and evaluate progress in autonomous practice. In addition, there was an expected increase in student-participants' ability to monitor individual musical progress during class and demonstrate self-regulating behaviors in the context of the school ensemble. Moreover, student attitudes and perceptions as recorded in the surveys and interviews provided greater insight to the complexity of the effect of practice on achievement in terms of student perceptions and willingness to use practice strategies.

### **Action Research Method/Design**

#### **Setting**

The school where the study was conducted serves an urban population combined with magnet students who apply to attend the school but who reside outside of the restricted attendance zone. To protect the identities of the participants and setting,

pseudonyms are used throughout the study. The school serves the district as a middle school magnet academy for traditional and global studies. According to the school website (Greenville County Schools, 2016), the percentage of students who received free and reduced-price lunch was 41.5% of the total student population in 2016. At the time of the study, the breakdown of the population of 830 students by ethnicity included 24.1% Black, 11.5% Hispanic, 57.5% White, and 6.9% other. Approximately one third of the student population matriculates under the school choice plan and must be provided with transportation to school over considerable distances.

The ethnic makeup of students enrolled in strings classes reflects the ethnic representation of the school as a whole. The three sixth-grade strings classes are elective classes in the overall curriculum of the magnet school, whose primary focus is traditional and global studies. Students choose to enroll in the program, and most parents agree to support their child's involvement by renting or purchasing an instrument (violin, viola, cello, or bass) for their child to use. The year of the study was the teacher-researcher's 15th year in the school; during this time, the enrollment in the strings elective classes has trended upward from approximately 32 students to an enrollment of 202 students divided into nine classes in 2016. The strings program is well equipped with a large inventory of school instruments available for students unable to afford rentals at a nominal annual charge. No student is excluded from participation in the program due to financial reasons. Parent support for the program is strong but is often connected to the financial investment assumed by the parents for their child's participation in the program.

The study was implemented during the second academic quarter of the school year. This provided time for student-participants to acquire instruments and to adjust to

the new environment and expectations of middle school. In addition, permission obtained from the cooperating district office stipulated that no research may be conducted during the second semester of the academic calendar due to the time demands and schedule interruptions of required state standardized testing.

### **Ethical Considerations**

As in the development of any qualitative research plan, consideration was given to inherent bias of the researcher. Mehra (2002) suggested,

[The] qualitative research paradigm believes that researcher is an important part of the process. The researcher can't separate himself or herself from the topic/people he or she is studying, it is in the interaction between the researcher and researched that the knowledge is created. So the researcher bias enters into the picture even if the researcher tries to stay out of it. (p. 9)

With this in mind, the teacher-researcher made every effort during the research process to reduce the influence of any inherent bias on her part by continually reflecting on study procedures and ethical interactions with the study participants.

### **Participants**

Homogeneous groupings are used for sixth-grade string orchestra classes at the study site so that all shoulder (violin and viola) instruments are in one class and all lower strings (basses and cellos) are in the other. This configuration addresses instrument-specific pedagogies for the unique posture differences inherent in holding each type of instrument as well as differences in musical clefs beginners must learn. Students receive instrumental instruction every day in the school schedule, and each class lasts approximately 50 minutes. Unlike core classes, however, there are frequent interruptions

in the elective class schedule due to assemblies, school reward programs, religious release time, and tutoring for other classes on an as-needed basis. At Green Middle School, students take one elective class in the morning and one in the afternoon. The study participants were all members of the afternoon cello/bass class.

The eight student-participants are described using pseudonyms as follows:

- Annabelle is an 11-year-old Latina female. She appears outgoing and speaks English with ease although it is her second language. She qualifies for free and reduced lunch and therefore is provided an instrument by the school at no cost. Her parents speak very little English in the home.
- Brook is a 12-year-old Black female. She appears quiet and appears to struggle with staying on task in the classroom. She rents an instrument through a private vendor. She appears to like playing the cello but struggles with posture and fine motor skills of the left hand.
- Carmer is a 12-year-old White female. She appears unreserved and talkative. She rents an instrument through a private vendor. Her parents are very involved at school and pay for piano lessons for Carmer outside of school.
- Danielle is a 12-year-old Black female. She appears reserved and does not like to make mistakes. She rents her instrument through a private source. Her parents are in frequent contact with the teacher to monitor her progress.
- Eddie is a 12-year-old Latino male. He appears reserved and works hard but has difficulty understanding assignments due to limited English proficiency. He contracts a school instrument at a nominal cost. Eddie frequently asks questions after class about ways he can improve but never contributes to discussions during class.



- Reid is a 12-year-old Asian male. Reid appears friendly and works hard. Reid's English proficiency is at a high level, but his parents speak no English in the home. Reid contracts a school instrument at a nominal cost.
- Siler is an 11-year-old White male. Siler appears outgoing and appears to enjoy learning to play the bass. Siler rents his own instrument through a private vendor. He also has a sister in the music program at school.
- Trent is an 11-year-old White male. Trent appears to have difficulty with staying on task and with many of the fine motor skills required in playing an instrument. He rents an instrument through a private vendor. Trent's parents have voiced concerns about his ability to be successful in learning an instrument.

### **Research Methods**

An action research model informed the design and elements of this qualitative research study. In the context of music education, action research is used to describe studies of music teaching and learning that are planned and investigated by K-12 music teachers or in collaboration with them. In addition, music education action research aims at the direct improvement of the teacher-researcher's own classroom and can also be used as a source to gather information for music program advocacy (Conway & Borst, 2001). According to Herr and Anderson (2005), action research is comprised of recurring cycles of planning, acting, observing, and reflecting. Conducting these cycles in tandem with the breadth and depth of information provided in the related literature provides the basis for continual reflection of what has been done before in this area of research as well as those areas in the research that may call for additional analysis and exploration.

Therefore, through the action research process, practitioners' knowledge based in a naturalistic setting can chart the limits of student improvement (Cain, 2008).

### **Exploration and Development Phases**

As detailed in Figure 3.1, the literature review and other types of information gathering occurred during the exploration phase of the action research plan. Student-participant attitudes about practice were carefully observed as the plan was developed to address successful and unsuccessful practice events on the continuum toward musical performance mastery. For instance, student-participants were asked to share with the class specific examples of what they found to be challenging or problematic on a practice assignment. Such information was critical in the development of a unique and strategic improvement plan by the teacher-researcher on behalf of the student-participants.

In addition, classroom observations yielded questions and topics that were integrated into the implementation phase of the research. In one situation, student-participants verbally expressed difficulty with specific rhythmic patterns in the repertoire. In response, the teacher-researcher selected specific goal-setting strategies and evaluation tools that incorporated the technical skills necessary to perform the difficult rhythm. Initial levels of student self-regulation were assessed using the Self-Regulation Questionnaire as a preliminary indicator of students' self-identified abilities to self-regulate. The information gathered from the survey provided data to establish target growth areas for individuals and the class. The survey was also used at the end of the research period to determine if students self-reported a more positive disposition about practicing their instruments after incorporating self-regulating strategies in autonomous practice.

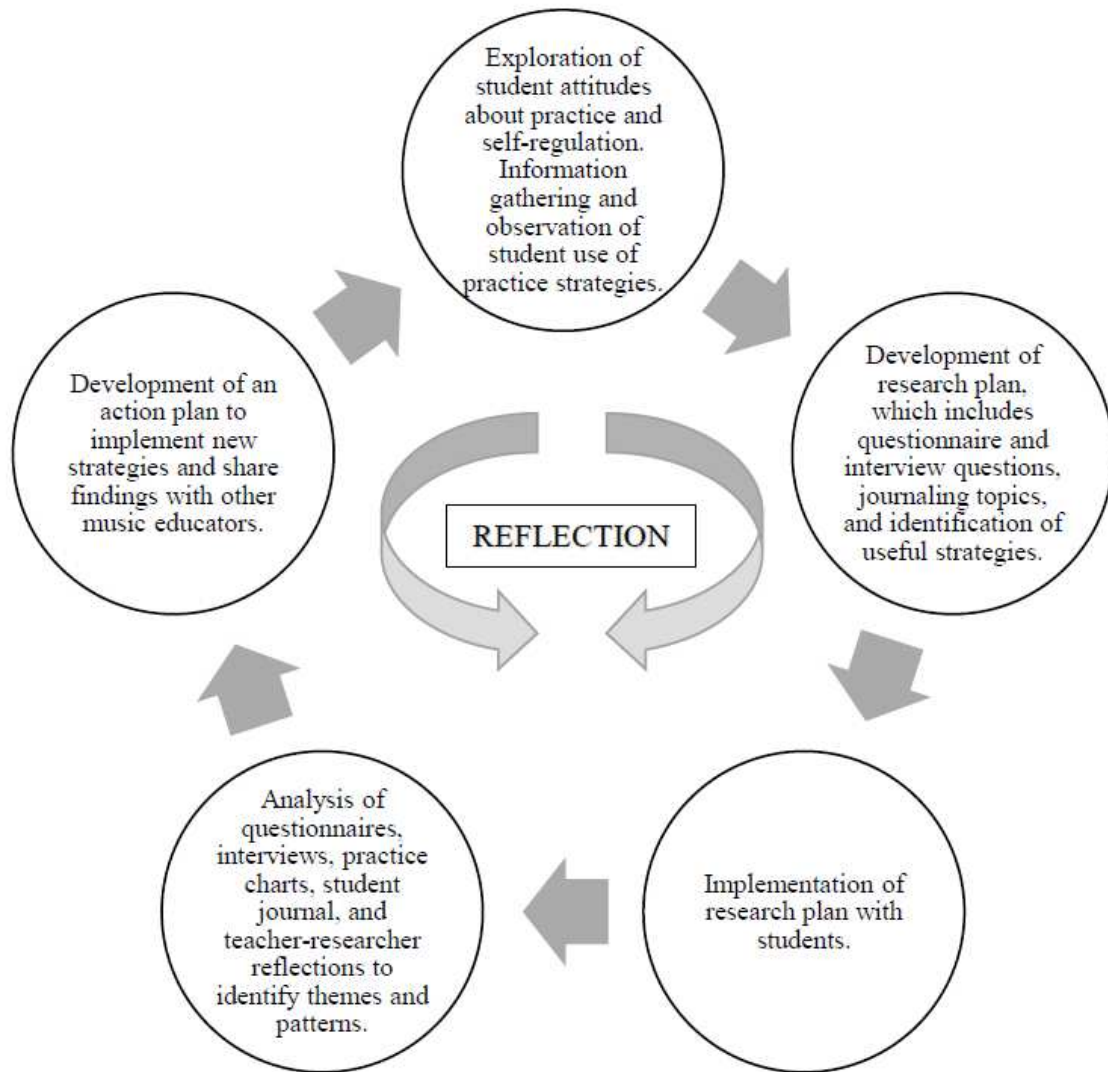


Figure 3.1 Research trajectory

### **Implementation Phase**

During the implementation phase of the research, data were collected from eight student-participants in a cello/bass strings class at one urban middle school in South Carolina. The guiding research question for the collection of data was, What impact do self-regulating strategies have on the musical achievement perceptions of eight sixth-grade students in a beginning orchestra class at Green Middle School? Drawing on elements found in the grounded theory research approach, qualitative data were analyzed

in order to develop potential theories “generated from the data which has been obtained through investigating real-life situations relevant to the research problem” (Mavaddat, 2014, p. 221). Questions generated by this approach included how student-participants perceived practice, what happened when self-regulating practices were employed, and whether student-participants felt that practice strategies were beneficial in promoting musical achievement. These questions were included in the student interviews to obtain a more formal student-participant response to each question. The specific tools used to generate data are described in the following sections with the specific methods employed to analyze the data from each instrument.

**Self-Regulation Questionnaire.** In order to obtain student-participants’ initial perceptions about their ability to self-regulate, a survey (see Appendix A) was administered to the class. Due to the length of the survey and the age of the student-participants, the survey was administered over the course of three class periods, taking approximately five to 10 minutes each day. The Self-Regulation Questionnaire (J. M. Brown, Miller, & Lawendowski, 1999) was developed to assess seven areas of the self-regulatory processes through self-report. As described in Appendix B, these areas include the self-regulatory processes as follows: (a) receiving relevant information, (b) evaluating the information and comparing it to norms, (c) triggering change, (d) searching for options, (e) formulating a plan, (f) implementing the plan, and (g) assessing the plan’s effectiveness. The authors of the instrument recommended using the survey aggregately to provide a holistic picture of an individual’s ability to self-regulate (J. M. Brown et al., 1999). The Self-Regulation Questionnaire was used to establish a baseline self-report score for each student-participant before the study began.

A poststudy self-report score was used to indicate any changes in student perceptions or attitudes as a result of the inclusion of self-regulation strategies in class.

**Student-participant interviews.** Student-participant interviews provided a rich source of data by asking student-participants about how they thought and how they learned (Dana & Yendol-Hoppey, 2014). Both the interviews and surveys were used to obtain an insider, or emic, perspective regarding the issues studied. Furthermore, the interaction between teacher-researcher and student-participant through each interview elucidated “the establishment of human-to-human relation with the respondent and the desire to *understand* rather than to *explain*” (Fontana & Frey, 2005, p. 366). Interviews with the eight student-participants were semistructured and allowed for follow-up questions; this provided for consistent investigation of particular topics with the participants and basic introductory questions but also afforded flexibility to engage in natural conversation that provided deeper insight. This type of approach made “the interview[s] more honest, morally sound, and reliable, because it treats the respondent as an equal, allows him or her to express personal feelings, and therefore presents a more ‘realistic’ picture than can be uncovered using traditional interview methods” (Fontana & Frey, 2005, p. 371). Also acknowledged by Fontana and Frey (2005) was the analysis and notation of body language and confirmation of shared meanings during the interview; it is important that the researcher and participant fully understand each other and the details of the conversation, thus enhancing the richness and integrity of the exchange.

As shown in Appendix C, interview questions asked of the eight student-participants were designed to probe their individual perceptions more deeply. Each student-participant was interviewed at the beginning of the study and again at the

conclusion of the data collection period by the teacher-researcher in a one-to-one classroom setting. These interviews provided evidence to clarify student-participant perceptions and attitudes about practice as a meaningful component of musical achievement and any changes that may have occurred in their attitudes during the study. The interviews consisted of three sections that addressed questions related to (a) general practice, (b) use of practice strategies, and (c) general practice attitude. The data from the interviews were used to detect patterns and themes among the student-participants that could influence the development of the action plan at the conclusion of this research cycle.

**Student-participant journals.** Journals provide an opportunity for teacher-researchers to explore how student-participants think. Moreover, journals “provide teachers a tool for reflecting on their own thought processes and can also serve as a tool for students to record their thinking related to the project at hand” (Dana & Yendol-Hoppey, 2014, p. 109). In this study, the purpose of the student-participant journals was twofold. First, the teacher-researcher explored how students understood self-regulating strategies as they were taught in class. To this end, the student-participants reflected on specific strategies taught in class and the degree to which they were able to successfully implement the strategies in personal practice time. Second, the journals were used for student-participant reflection about personal practice time including things that worked well, things that did not work, and any additional descriptive information that further informed the exploration of the topic. The data collected from the journals were included as a descriptive summary to further enrich the data collection portion of this action research cycle.

**Practice charts.** Student-participant practice charts provided information on choice and preference of strategy use (see Appendix D). In addition, the practice records provided evidence of the use of three critical self-regulating strategies, namely, goal setting, monitoring, and evaluating. Although practice records were self-report in nature, the teacher-researcher required the signature of a parent/guardian for verification purposes. The practice records also provided descriptive data that, when triangulated with the questionnaire, journals, interviews, and teacher field notes, provided a more comprehensive description of the topic of study.

**Field notes.** The teacher-researcher kept a journal that contained reflections and observations as the research occurred. In order to capture a detailed description of the process, field notes were recorded by the teacher-researcher promptly after school on Monday, Wednesday, and Friday of each of the 6 weeks of data collection. Cognizant that much of what was seen and heard by the teacher-researcher could have potentially provided relevant details to the qualitative narrative of the data analysis, it was beneficial to record as much information as possible in as much detail as possible (Mertler, 2014). The field notes (see Appendix E) provided times of observations, initial observations, and observer comments that provided valuable commentary when related to the other data collection instruments.

### **Procedure**

The student-participants in this study met for class every day from 12:35 p.m. until 1:17 p.m. At the beginning of the 6-week data collection period, student-participants completed the Self-Regulation Questionnaire during the first 10 minutes of three successive class periods. Due to the age of the student-participants and the number

of survey items, the teacher-researcher decided to administer a portion of the survey each day to ensure that the class members did not fatigue during the process. Results of the survey were used to identify perceived areas of weakness in student-participants' self-regulating behaviors. In addition, each of the student-participants was interviewed by the teacher-researcher to gather initial practice perceptions.

The teacher-researcher determined that data from student-participant journals and teacher-researcher field notes would be collected on Monday, Wednesday, and Friday of each of the 6 weeks during the study. Data from the journals during the first 2 weeks included general student-participant reflections about their practice at home. In addition, the teacher-researcher recorded relevant class discussions and student-participant comments about practice habits and attitudes. It is important to note that self-regulating behaviors were not addressed during the first 2 weeks of data collection, which allowed time to explore general practice attitudes with the student participants. Student-participants also completed time-oriented practice charts, with which they were already familiar, during Weeks 1 and 2.

During the third and fourth weeks, the teacher-researcher spent approximately 10 minutes each day teaching, modeling, and reviewing three specific self-regulating strategies with the class to be used during individual practice time at home. These strategies were selected based on the preliminary results of the Self-Regulation Questionnaire. The selected strategies included goal setting, monitoring, and evaluating one's practice in the context of autonomous practice. Time was given for questions, clarification, and brainstorming among student-participants as to which strategies they



thought might work best and why. Student-participants continued to journal three times a week, and the teacher-researcher continued taking field notes throughout each week.

During Weeks 5 and 6 of the data collection period, student-participants completed practice charts that provided a self-regulation model during home practice. They also continued journaling about practice successes and failures during the first 10 minutes of class three times a week. Student-participants were again interviewed individually to gather information on any changes to their perceptions about practice and their use of self-regulating strategies. Finally, the survey was repeated at the end of the 6-week period to reflect any changes in student-participant perceptions about the ability to self-regulate.

### **Data Analysis**

At the completion of the data collection period, all data were carefully analyzed for emerging patterns and themes that developed from the inclusion of self-regulating strategies in the beginning instrumental class setting. Typically, the teaching of self-regulating strategies was not included in the regular strings curriculum; therefore, the teacher-researcher was primarily interested in any information embedded in the data that indicated the incorporation of self-regulation instruction was related to an increase in student-participant perceptions of musical achievement. In addition, student-participant attitudes were recorded with a conflated description of results from interviews, survey results, student journals, practice records, and field notes. This process enabled reflection about the larger picture of collected data results as they related to the PoP and included subsequent questions the data indicated require further investigation. As suggested by Dana and Yendol-Hoppey (2014), the aggregate analysis of results allowed the teacher-

researcher to consider “the entire data set as a whole rather than pieces or subsets” (p. 165). Although the size of the student-participant sample limited the ability to generalize, the overall analysis of the data yielded information that may have impinged on the patterns and themes identified in the study.

### **Reflecting With Participants**

At the conclusion of the research, the teacher-researcher and the student-participants engaged in what Mertler (2014) referred to as a participant debriefing. In this context, the student-participants expounded on any emotions or situations that may have compromised their legitimate participation in the study. For example, one student-participant admitted that she struggled with written assignments; thus, she wrote very little in her journal. Moreover, student-participants were afforded the opportunity to share additional insights that may have been of interest as student and teacher reflection continued.

### **Devising an Action Plan**

Based on the results of this study, the teacher-researcher developed an action plan that included a recommendation to use a modified practice chart tool to encourage and aid students in thoughtfully using self-regulating strategies during individual practice time. In addition, the teacher-researcher led a professional development session in which she recommended to other instrumental teachers and the district arts supervisor further research and replication of the study in different teaching environments with diverse populations to strengthen and test the research results. It is probable that other teachers of beginning instrumental music have experienced similar difficulties with student practice and may be willing to try the proposed strategies in the research plan. Since a

possible positive relationship between the use of metacognitive strategies and achievement was indicated, other district teachers were encouraged to incorporate this information into their school environment to see if similar results can be obtained.

It was important to recognize in the sharing process that teacher-researchers must examine potential causes and influences of the “problem” or topic of interest. As Herr and Anderson (2005) stated, “Like all forms of inquiry, action research is value laden. Although most practitioners or communities hope that action research will solve pressing problems or improve their practice, what constitutes improvement or a solution is not self-evident” (p. 4). As the authors also suggested, the teacher-researcher took into consideration conflicting societal values particularly in diverse school populations when examining the problem and when trying to determine who will benefit from any proposed solution. To that end, the data were shared through the lens of the specific context of the teacher-researcher’s class without the implication of large-scale generalizability.

## **CHAPTER FOUR**

### **FINDINGS FROM THE DATA ANALYSIS**

This study examined self-directed practice with eight student-participants in a sixth-grade cello/bass music class when self-regulating strategies were included in class instruction. The identified PoP for the study was that sixth-grade beginning orchestra student-participants appeared not to have the awareness to incorporate self-regulating practice strategies in their individual practice. The teacher-researcher conducted the study to investigate the PoP during regular class time to observe student-participants in an authentic environment while enmeshed in their normal course of instruction. By triangulating multiple sources of data, the teacher-researcher provided a substantial description of student-participants' perceptions, attitudes, and beliefs about their capacity to manage their practice time with self-regulating behaviors.

During the 6-week period of collecting data from November 1, 2016, through December 16, 2016, student-participants recorded journal reflections three times per week during class from 12:35 p.m. to 1:17 p.m. In addition, the teacher-researcher recorded field notes immediately after school on each of these days to provide prompt and accurate reflections about interactions and comments from class. Student-participants filled out and handed in practice charts each week with information about their practice time. Lastly, student-participant interviews and the Self-Regulation Questionnaire were administered at the beginning of the data collection period and

repeated at the end to detect any possible changes in perceptions as reported by members of the class.

### **Research Question**

What impact do self-regulating strategies have on the musical achievement perceptions of eight sixth-grade students in a beginning orchestra class at Green Middle School?

### **Purpose of the Study**

The purpose of this study was to examine the impact of self-regulating strategies on the musical achievement perceptions of eight sixth-grade students in a beginning orchestra class at Green Middle School.

### **Findings of the Study**

In reporting the findings of this study, the researcher first presents notable subthemes that emerged from the individual data collection instruments. Once the individual data sources are discussed and with relevant commentary from the field notes, the teacher-researcher then presents the overarching patterns that emerged when the data sets were conflated.

The teacher-researcher examined each instrument for student-participant self-reports of musical achievement. To reiterate, musical achievement in this study are measured using two parameters: (a) self-reports of individual improvement and ability to effectively use self-regulating strategies and (b) teacher observations of improved class performance and student-participant use of self-regulating strategies. By first examining each of the sources of data, the teacher-researcher was able to extrapolate student-participants' perceptions about musical achievement and identify common responses

among the student-participants. Subsequently, the teacher-researcher was able to compare these data to observations and field notes in order to determine if performance during class was affected and if there was a perceived increase in the student-participants' use of self-regulating behaviors.

### **Overall Results of Self-Regulation Questionnaire**

Results of the Self-Regulation Questionnaire (see Figure 4.1) indicated that seven of the eight student-participants perceived an increase in their ability to self-regulate from the beginning of the study to the end. Results from the eighth student-participant showed no change. At the beginning of the study, student-participants scored from 188 to 228 on the survey, which included six scores in the low quartile of self-regulation capacity and two scores in the intermediate quartiles of self-regulation capacity. When the survey was administered the second time, student-participants scored from 202 to 237 with the scores of all but one student-participant falling in the intermediate quartiles of self-regulation capacity as indicated in the scoring guide; the one exception was a student-participant who scored at the top of the low range (J. M. Brown et al., 1999). The average score increase of student-participants was 15.87 points or a 6.1% increase in self-regulating capacity.

None of the student-participants scored in the top quartile of the scoring guide (see Appendix B), which would indicate a high capacity for self-regulation; this may be due to the age of the student-participants since children do not tend to implicitly acquire these skills (McPherson & Renwick, 2001). Moreover, the objective of this study was to identify potential changes in student perceptions about the ability to self-regulate. To that end, data from the Self-Regulation Questionnaire indicated that the inclusion of self-

regulating strategies during the data collection period increased perceptions of self-regulating abilities in a majority of the student-participants.

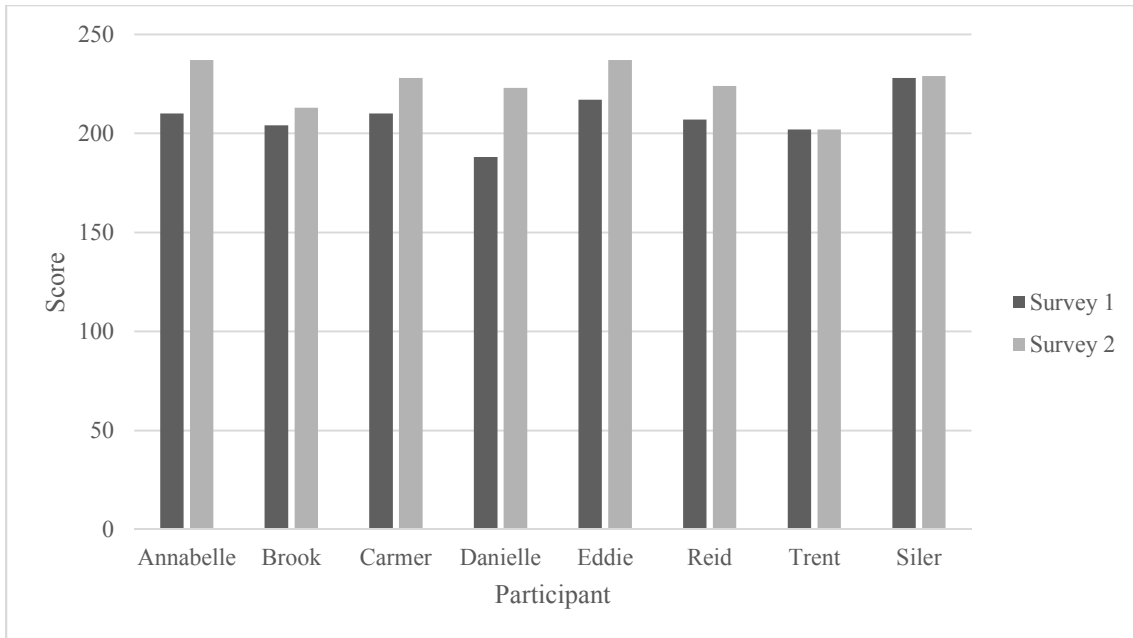


Figure 4.1 Overall results of Self-Regulation Questionnaire

### Analysis of Subsets of Questionnaire

In order to provide a more detailed analysis of the data, the teacher-researcher individually examined three behavior subsets of the survey: (a) planning (goal setting), (b) implementing (monitoring), and (c) assessing (evaluating). The results of the planning subset (see Figure 4.2) showed that seven of the eight student-participants perceived an increase in their ability to set goals and execute planning strategies. The average gain per student-participant was 2.5 points from presurvey to postsurvey. Carmer, who had one of the higher increases in the planning subset, remarked that “setting goals helped [her] focus on what [she] needed to work on the most when [she] practiced.” This may indicate that student-participants believed practice was more

purposeful when they had already identified and listed problems before they started the practice session. As proposed by Zimmerman (2002), the importance of developing this particular self-regulating strategy is that the self-beliefs students hold about their goals have been shown to have an impact on motivation and learning strategies.

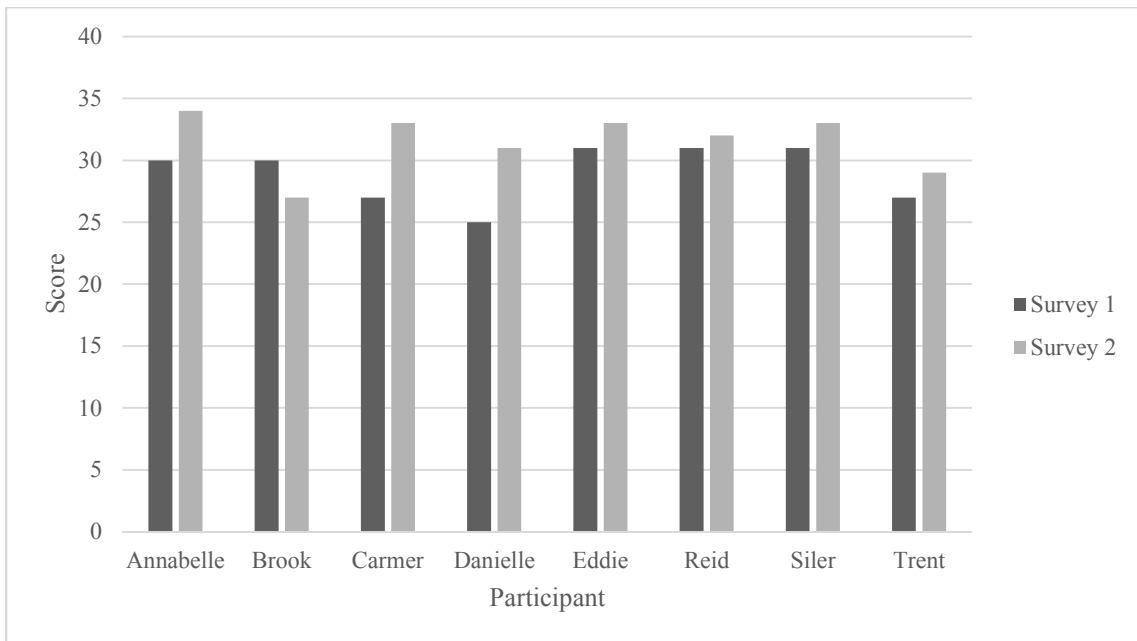


Figure 4.2 Results of planning subset

The results from the implementation subset (see Figure 4.3) showed that six of the eight student-participants perceived an increase in their ability to monitor progress toward a goal. The average gain per student-participant was 4.0 points from presurvey to postsurvey. Student-participants evaluated statements about their ability to stick to a plan and avoid distractions in this subset. Of the student-participants who reported an increase, the average gain was 6.1 points. Two student-participants, Siler and Trent, reported a modest decrease of 1.0 and 2.0 points, respectively. When compared to the other two subsets, average gains were greater in the implementation subset. Annabelle



commented that she “liked the list of strategies written down on the practice chart so that [she] can try each one and see what works for [her].” In this instance, engagement appeared to increase when the student-participant was afforded the opportunity to choose which strategies she preferred.

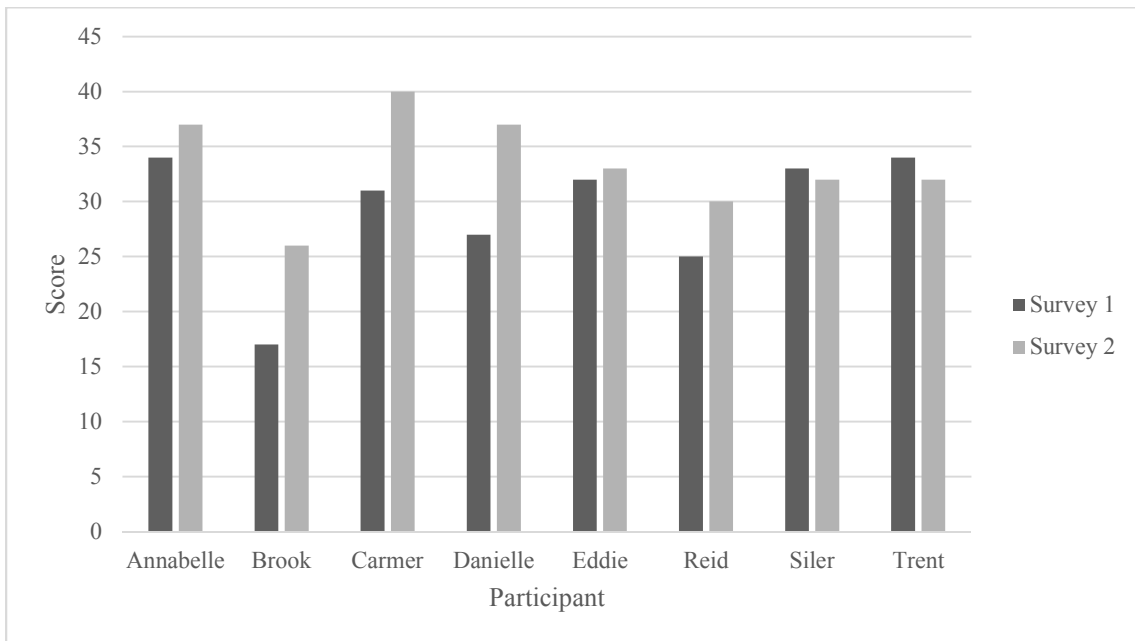


Figure 4.3 Results of implementation subset

The third subset included information on the student-participants’ perceptions of their ability to evaluate or assess progress. Student-participants responded to statements about keeping track of progress, learning from mistakes, and changing strategies if something is not working well. As recommended by Leon-Guerrero (2008), students responded as to their ability to work toward mastery of a selected goal, which in music performance includes proficiency of musical material. The results of the assessing subset (see Figure 4.4) indicated that five student-participants perceived an increase in their ability to evaluate and assess progress at the end of the data collection period. The

average gain per student-participant was 1.38 points from presurvey to postsurvey. One student-participant, Eddie, perceived no change, and two others, Brook and Siler, reported a decrease in their perceived ability to assess. However, the results from this subset were consistent with the results from the other subsets and overall findings from the survey in that a majority of student-participants indicated an increase in their perceived ability to demonstrate self-regulating behaviors from the first to the second administration of the survey during the 6-week period of data collection.

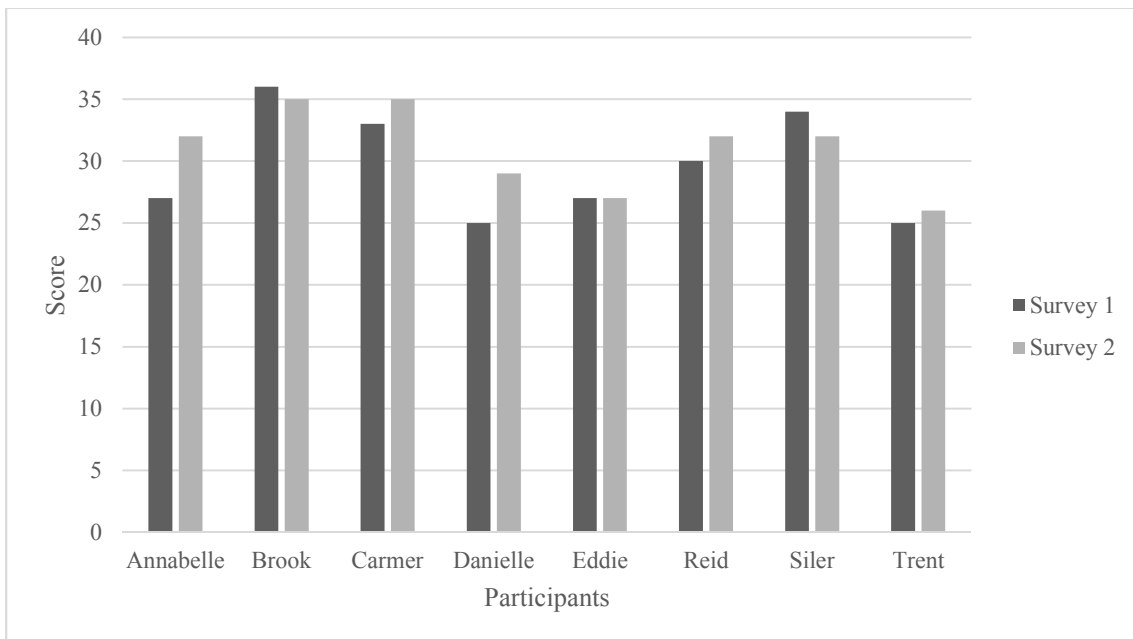


Figure 4.4 Results of assessing subset

### Student-Participant Interviews

Individual student-participant interviews occurred at the beginning of the data collection period and were repeated at the conclusion of the period. These interviews provided an in-depth narrative of student-participants' perceptions and beliefs about (a) general practice, (b) use of practice strategies, and (c) individual practice attitudes.

**Annabelle.** In Annabelle’s pre-interview, she indicated that although she enjoyed practicing her instrument outside of class, her primary purpose was to complete the assigned time on her practice chart. She also indicated that she believed practicing would help her become a better player. When asked how she felt about practicing during the second interview, Annabelle responded that she liked being organized and that now she “set up a list of things to do before practicing to keep [her] on track.”

When first asked how she organized her practice time, Annabelle responded, “I don’t.” She stated that her primary mode of practice was to play straight through the music until she got to something she could not play, at which point she would simply repeat what she had already played. In the postinterview, Annabelle responded, “I have better ideas about ways to work toward goals—like chunking and going measure by measure through the piece. I feel like I know what to look for now.” Annabelle shared that she enjoyed playing her instrument during both interviews and that she believed practicing was valuable. In the second interview, however, she elaborated that by “working harder during practice, I believe that I can do this better,” suggesting an added element of self-efficacy in her response.

**Brook.** During the pre-interview, Brook indicated a sense of concern that she “might mess up too much” when practicing. She also indicated that her primary practice strategy was to play straight through the pieces and then repeat them. When asked why practice was valuable, she responded, “That depends on if I get a whole lot better.” However, Brook offered short “yes” and “no” answers to most questions, which seemed to indicate a lack of understanding of individual practice as a means of improvement as

well as the idea that planning and organizing her practice time may increase her technical abilities and playing capacity.

Brook's responses to the postinterview remained brief although she did elaborate on several practice strategies she tried, including scanning the music, slowing the tempo, and repeating more difficult material. In addition, Brook commented that "practice helps because it gives you control to correct mistakes and the opportunity to fix them." She also noted that she believed practicing was fun because "it is interactive and uses [her] brain." Finally, she reiterated that many times she had difficulties getting her hands in the right positions and keeping them there while she played.

**Carmer.** In her affable way, Carmer expressed the belief that "practice makes perfect" in the pre-interview. She stated that practicing was fun and helpful but indicated no particular plan of organization in her practice or in setting musical goals. Carmer's comments included generalizations about how valuable she believed individual practice to be, noting that it "makes you more successful and makes it so you can play more challenging pieces." However, when asked a follow-up question about exactly what she did to be more successful, Carmer responded that she did not know.

In the postinterview, Carmer was much more specific about planning practice time and using strategies reviewed during class. She related the use of strategies while practicing her cello to her homework in other classes and contended, "It's like you are doing homework and just write down a bunch of random answers and don't learn anything. Your score will be better if you plan what you are doing and do it the right way." Furthermore, she commented that using strategies enabled her to recognize her mistakes by making her think more about them, thus demonstrating reflective thinking.

**Danielle.** Danielle was one of the only members of the class to mention the use of strategies during the pre-interview. She had already used chunking and repetition of difficult material by the time she talked to the teacher-researcher. Taking even more initiative, Danielle also shared that she would look up the music the class was playing online and listen to the other parts and how her part fit with them. Lastly, she indicated that she thought practicing was valuable because she could get used to listening to herself and play better in tune.

During the postinterview, Danielle mentioned the practice chart model several times although there was not a specific question about the model. She said she “really liked the practice chart that helped [her] think through what [she] needed to do.” In addition, she liked that the practice chart offered strategy suggestions and reminded her what her goals were. Danielle commented, “The practice chart puts it right in front of you—you know what to do and how to do it, so you can’t forget it.” When asked if strategies made her practice more successful, she stated, “Without them, I end up playing through the music aimlessly, which doesn’t fix anything.”

**Eddie.** Eddie was very shy during the pre-interview and seemed uncomfortable talking one-to-one with a teacher. Most of his answers were “yes” or “no,” and he did not offer more information even with follow-up questions. Eddie expressed that he did believe practice was helpful because “it helps to make [him] better.” However, he offered no specific references to strategies or organization of practice time during the interview.

The postinterview yielded more dialogue with Eddie. When asked if he believed practice helped, Eddie responded, “Practice helps you exercise what you already know

and learn what you need to know.” Although he was not sure if employing strategies actually made him more successful, he mentioned at least three strategies he had been using: repetition, simplification, and chunking. Eddie also indicated that he found the practice chart model including self-regulating strategies to be helpful. He commented, “That practice chart helped me set a goal and see what I need to work on.”

**Reid.** In the course of the pre-interview, Reid responded that he believed practice would help him become a better player. Reid mentioned that he organized his practice by playing through the concert pieces and then practicing items in the class method book. In terms of strategy use, he practiced by plucking the music first and then bowing the music. In general, however, he only used repetition as a means of improvement. Reid commented, “Practice is valuable because it can help people learn things faster. It can also help things that you are playing get easier.”

The postinterview with Reid provided more specific information about his practice perceptions. When asked if he thought practice helped, Reid commented, “Practice helps to focus on one thing in particular to get better—it improves my accuracy with rhythm and notes.” He also reported an increase in his use of strategies including using a metronome, simplification, and paying closer attention to modeling by the teacher-researcher during class. Lastly, Reid indicated that although the hard parts of the music could be frustrating, he believed practice made him a better player. In his words, “Practice makes you a stronger player because without it you are stuck on easy.”

**Siler.** Siler appeared very thoughtful during the pre-interview. He took time to think about his response before answering each question. He indicated that he believed practice would help him be a better player but mentioned the lack of available time in his

schedule. Siler commented that he organized his practice by “playing through the piece until [he] mess[ed] up and then going back and playing that part about five times.”

Although he said that he believed strategies would make him more successful, he shared, “My strategies are I play like I am in a concert.” Siler also commented that he did not think practicing was as enjoyable as playing at school where someone was guiding him.

When Siler answered the interview questions during the postinterview, he again indicated that practice was helpful. However, Siler was now able to identify specific strategies that he had been using, such as simplification and starting with the difficult passages first. He had also changed the way he organized his practice time to start with scales and exercises from the method book and then focus on the harder sections of the music. Siler mentioned that “practice was valuable because it can help you feel better about yourself.” Finally, he added that he liked the practice chart model that listed strategies to use because “it gave you an idea of how to improve.”

**Trent.** During the pre-interview, Trent shared that he liked to practice his cello but often had trouble finding the time to do it. Although he admitted that he did not plan his practice time or use any type of strategy to approach the assigned music, he indicated that practice outside of class gave him time to work on more difficult sections at his own pace. Like Annabelle, however, Trent mainly used his practice time to play straight through the music with limited attention to correcting mistakes.

During the course of the postinterview, Trent conveyed more of a sense of ownership over his independent practice. When asked if he believed practice helped, Trent responded, “Totally, you can control it.” When probed deeper, he explained that he really wanted “to work on a problem to fix it,” so he included strategies learned in class

to “figure out what [was] keeping [him] from playing it right.” Trent also personalized the value of practicing on his own. He acknowledged, “Sometimes I just need to work on something that someone else doesn’t.”

### **Student-Participant Journals**

Journals were used to collect data on how student-participants understood and employed self-regulating strategies. To that end, the student-participants reflected on specific strategies taught in class and the degree to which they were able to successfully implement the strategies in personal practice time. Secondly, the journals were used for student-participant reflection about personal practice time, including things that worked well, things that did not work, and any additional descriptive information that further informed the exploration of the topic.

The student-participant journals were coded by the teacher-researcher in order to identify specific problems that were encountered during self-directed practice as well as any specific successes that the student-participants recorded. In addition, items that provided evidence of strategy use were coded as belonging to either goal setting, monitoring, or evaluating subsets of self-regulating behavior. The results (see Table 4.1) indicated that although most of the student-participants reflected on and recorded the use of goal-setting and monitoring strategies, several only employed one or two strategies. In addition, some of the student-participants appeared to have difficulty writing about their practice perceptions and included minimal information in their journals. This may have been attributed to individual difficulties in written expression typical of these student-participants in all their classes. Overall, it appeared that the student-participants successfully used strategies to identify problems and self-regulate in terms of setting



goals and monitoring practice by including information about items from their individual practice time that were challenging and detailing at least one strategy that reflected the use of self-regulation.

Table 4.1 Summary of Results From Student-Participant Journals

Student-participant	Problems identified by student-participant	Successes identified by student-participant	Self-regulation evidence identified by teacher-researcher
Annabelle	<ul style="list-style-type: none"> <li>• Motor skills</li> <li>• Rhythm</li> <li>• Bowing</li> <li>• Getting distracted</li> </ul>	<ul style="list-style-type: none"> <li>• Improved bowing</li> <li>• Improved note reading</li> </ul>	<ul style="list-style-type: none"> <li>• Goal setting</li> <li>• Monitoring</li> </ul>
Brook	<ul style="list-style-type: none"> <li>• Motor skills</li> <li>• Intonation</li> </ul>		<ul style="list-style-type: none"> <li>• Monitoring</li> </ul>
Carmer	<ul style="list-style-type: none"> <li>• Tuning</li> <li>• Getting distracted</li> <li>• G string notes</li> </ul>	<ul style="list-style-type: none"> <li>• Improved bowing</li> </ul>	<ul style="list-style-type: none"> <li>• Goal setting</li> <li>• Monitoring</li> </ul>
Danielle	<ul style="list-style-type: none"> <li>• Getting distracted</li> <li>• Finger placements</li> </ul>	<ul style="list-style-type: none"> <li>• Isolated and corrected fingering</li> </ul>	<ul style="list-style-type: none"> <li>• Goal setting</li> <li>• Monitoring</li> <li>• Evaluating</li> </ul>
Eddie	<ul style="list-style-type: none"> <li>• Tempo of pieces</li> <li>• Lack of time</li> </ul>	<ul style="list-style-type: none"> <li>• Note reading</li> </ul>	<ul style="list-style-type: none"> <li>• Goal setting</li> </ul>
Reid	<ul style="list-style-type: none"> <li>• Finger placements</li> <li>• Intonation</li> <li>• Articulating goals</li> </ul>	<ul style="list-style-type: none"> <li>• Fixing problem measures</li> <li>• Accuracy</li> </ul>	<ul style="list-style-type: none"> <li>• Goal setting</li> <li>• Monitoring</li> <li>• Evaluating</li> </ul>
Siler	<ul style="list-style-type: none"> <li>• Pitch</li> <li>• Time management</li> <li>• Bowings</li> </ul>	<ul style="list-style-type: none"> <li>• Note accuracy</li> </ul>	<ul style="list-style-type: none"> <li>• Goal setting</li> </ul>
Trent	<ul style="list-style-type: none"> <li>• Remembering</li> <li>• Fixing problems</li> </ul>	<ul style="list-style-type: none"> <li>• Use of practice strategies</li> </ul>	<ul style="list-style-type: none"> <li>• Goal setting</li> </ul>

Perhaps the most significant pattern that emerged from the student-participant journal data was the absence of evaluation evidence in most of the reflections. That is, only two of the eight student-participant journals contained references to the use of evaluating strategies. In her journal, Danielle reflected that while practicing, “I was finally able to play the whole notes with a good sound, which is something I usually can’t

do.” Although Danielle was able to evaluate the effectiveness of her goals and monitoring efforts, most members of the class only wrote about goals and monitoring behaviors.

The absence of evaluation evidence was consistent, however, with the results from the assessing/evaluating subset of the Self-Regulation Questionnaire. In the assessing/evaluating subset, student-participants experienced a gain of only 1.38 points as compared to 4.00 points in the implementing/monitoring subset and 2.50 points in the planning/goal-setting subset. From these data, it appeared that student-participants either did not understand how to evaluate their performance or perhaps the teacher-researcher needed to better clarify the evaluation process. It has been recognized, however, that the ability to identify key decision-making components such as evaluation in self-regulated learning may be particularly difficult for children (Zimmerman, 1990). Thus, the evidence contained in the student-participant journals provided support for this position.

### **Practice Charts**

The practice charts (see Appendix D) were created by the teacher-researcher to guide student-participants to use self-regulating strategies while they practiced on their own. Designed with input from the student-participants, these practice charts provided information on practice goals, ability to monitor practice, and ability to assess effectiveness of strategy use. Although the charts were self-report in nature, the teacher-researcher required the signature of a parent or guardian when they were turned in for verification purposes.

Most of the student-participants (88%) indicated that they liked the new practice chart model more than the time-oriented charts they had used previously. However, one

of the student-participants, Brook, did not turn a practice chart in; she insisted she did the practice but forgot to get a parent to sign the chart. The most frequent comment about the new charts was that they were helpful because they provided a list of practice strategies to try when student-participants could not figure out what to do. Based on a constructivist pedagogy, these suggested strategies provided the student-participants with the opportunities to build their own understanding of the music by solving genuine problems (Wiggins, 2007).

Secondly, student-participants appeared to like the fact that the charts were focused on the quality of playing versus the quantity of playing. This may, however, be an indication that student-participants perceived they did not have to practice as much without the time requirement, which may be an item to consider in the development of the action plan of this study. Lastly, the student-participants shared that they were more engaged with the practice charts featuring self-regulating strategies because they were asked to reflect and provide feedback on various aspects of their playing.

Results from the practice charts indicated that student-participants recorded playing the correct notes as their most frequent goal. They also indicated that playing with a good tone was a priority. For beginning players, this result is not surprising because correct notes and good tone are fundamental objectives in learning to play an instrument. According to McPhail (2013), “The foundations, particularly technical, laid in place at the onset, should enhance the potential for later musical progress” (p. 163). It is important to recognize, however, that even though student-participants spent time on these skills during class with modeling and guidance by the teacher-researcher, they

demonstrated self-regulating behaviors when they chose to work on these same skills during self-directed practice.

Student-participants recorded a variety of examples of monitoring behaviors including shifting, adequate pressure with finger placement, rhythmic precision, and slurring. The variety of responses was indicative of the highly personal nature of monitoring one's performance. Monitoring in deliberate practice involves multiple processes including recognizing errors and identifying challenges, assessing what must be done to correct the problems, and then choosing the appropriate practice strategies to remediate the problems (McPhail, 2013). Thus, student-participants recorded items that were individually problematic in the context of their performance abilities.

Relative to the other sections of the self-regulating practice chart model, student-participants recorded much less feedback in the evaluation section. Five of the eight student-participants briefly noted improvement on the evaluation section of their practice charts. As was previously discussed with the journals and the Self-Regulation Questionnaire, student-participants appeared either to not understand how to evaluate their practice time or to be hesitant to indicate improvement. As suggested by Wiggins (2015), an integral part of active engagement in music education is that assessment of learning is embedded in and emerges from the learning experience. To better understand why student-participants did not offer more insight or information about evaluating during their practice time, additional exploration of this topic should be considered. In sum, however, student-participants who submitted practice records were able to follow the chart framework and respond to selecting a goal, planning and monitoring practice, evaluating progress, and implementing practice strategies with appropriate behaviors.

## **Interpretation of Results of the Study**

The multiple distinct sets of data from this study revealed a number of interrelated results. By using the constant comparative method suggested by Mertler (2014) as a means to analyze qualitative data, three overarching findings emerged related to (a) student-participant *awareness* of self-regulating strategies, (b) student-participant *ability* to implement self-regulating strategies, and (c) student-participant *attributions* from the use of self-regulating strategies in practice. Each of these patterns offered a unique perspective in response to the research question about whether the inclusion of self-regulating strategies in the strings curriculum appeared to benefit the student-participants' achievement level in their self-guided practice time.

### **Awareness**

When considering the data collection results as a whole, the first theme that emerged was that once student-participants received instruction during class about how to set practice goals and use strategies, they became more cognizant of opportunities to do so. At the beginning of the data collection period, student-participants generalized that practice was “time you spend going over your music at home.” During class discussions, student-participants could not identify any types of self-regulating or technical strategies that they used while practicing. Student-participants appeared to understand the concept of playing for a certain amount of time (for a timed practice assignment) but seemed confused when asked to respond to queries about the content and quality of their practice. Furthermore, practice, as recorded on individual practice charts, consisted mostly of playing straight through music without attention to musical goals, strategies, or progress.

After the teacher-researcher provided instruction on self-regulation and its application in the context of self-directed practice, student-participants demonstrated an increased awareness of its applicability. For example, during a rehearsal, the teacher-researcher stopped the class to explain a particular performance problem. One of the student-participants, Siler, excitedly interrupted the explanation and yelled out, “We can make that a practice goal.” He immediately put his cello down, pulled out his practice chart, and wrote down specific measures to work on that night during practice. In this way, these young musicians seemed to finally start connecting difficulties in the music to their individual capacity to prioritize and approach those problems during independent practice time.

In addition, data from multiple instruments also indicated that student-participants developed an increased awareness of behaviors and specific strategies indicative of self-regulation. Scores from the first administration of the Self-Regulation Questionnaire placed a majority of the class members in the low range of self-regulation; however, the postsurvey scores placed all but one student-participant in the intermediate range, thus demonstrating an increase in perceived self-regulating abilities. Student-participants also established a working repertoire of skill-specific strategies such as using a metronome, simplification, and fingering, which was evidenced on their practice charts and observed by the teacher-researcher during class.

Furthermore, data from the pre-interviews suggested limited, if any, understanding among the eight student-participants as to the meaning or benefit of self-regulating strategies. During the postinterviews, student-participants not only stated that they incorporated strategies in their practice, but six of the eight were also able to name

and describe the specific strategies they used. One example was Danielle, who specifically described monitoring strategies of chunking, scanning, and listening to recordings in her postinterview. Danielle stated, “After learning what to do when I make mistakes, I feel like I have the tools to fix it.” Thus, student-participants communicated an increased awareness of self-regulating strategies and also a perceived improvement of their ability to use self-regulating strategies to advance their musical proficiency.

Student-participant journals and practice charts likewise provided evidence of an increased awareness of self-regulating behaviors and strategies with specific reflections by individuals about why and how they used selected strategies. In Reid’s journal, his first entries reported repetition as his primary means to approach musical problems. Over the course of the data collection period, Reid became much more specific in his choice of strategies including using a metronome to increase rhythmic accuracy, chunking difficult sections to isolate challenging note patterns, simplification, and fingering through position shifts to develop muscle memory before bowing. The specificity of his reflections confirmed an increased awareness and understanding of the self-regulating strategies he now purposefully incorporated into his practice time.

### **Ability**

The findings from the data sets also suggested an increase in student-participants’ perceptions of their ability to employ self-regulating strategies. As previously stated in the discussion of overall results from the Self-Regulation Questionnaire, seven of the eight student-participants’ scores increased between the pre- and postsurvey. The increase in scores demonstrated that student-participants perceived a greater capacity to implement strategies that is strongly indicative of the instruction received during class.

Moreover, information from the student-participant interviews indicated that a majority of the student-participants felt more capable of using self-regulating strategies at the end of the data collection period. In their postinterviews, both Danielle and Trent commented on how much better they felt about organizing their practice time so they could actually accomplish something rather than just playing straight through their music.

Finally, student-participant journals and practice charts provided the most robust indication of an increased ability to use self-regulating strategies. As previously discussed, Table 4.1 provided evidence of self-regulating strategy use as identified by the teacher-researcher in practice charts. Also, throughout their journals and practice charts, student-participants expressed their choice of strategies and ability to use selected strategies. During a reflection in his journal, Siler shared that he “downloaded a metronome app on [his] phone last week to make sure [he] was keeping the right tempo for our pieces.” Also evidenced in the data was the typical self-regulated approach to practice, which involves the ability to react by altering and adjusting one’s playing based on feedback obtained when performing (McPherson & Renwick, 2001). It was apparent from comments in the journals that student-participants had incorporated the teacher-researcher’s suggestions and rehearsal comments into their practice charts and journal reflections.

The one area where ability appeared limited was in the use of evaluation strategies. Only a few student-participants included specific references to any kind of evaluative behaviors during practice. This pattern was observed in the student-participant journals, practice charts, teacher field notes, and results from the survey. Although the reason for this occurrence is unclear, it has been suggested by Gruhn (2002) that the



development of “skills does not perform a linear progression but rather progress in leaps according to the cognitive state” (p. 55). In this situation, student-participants may have referenced more examples of evaluative behavior given a longer period of observation and data collection or if the evaluation process had been further clarified by the teacher-researcher.

### **Attributions**

Based largely on the attribution theory by Weiner (1985), which was previously discussed in the review of the literature, observations and field notes by the teacher-researcher indicated that once the student-participants experienced success using self-regulating strategies, they were more likely to continue trying to use them to replicate successful outcomes. In other words, student-participants attributed improvement in practice to their perceived ability to implement the strategies taught during class; therefore, when the strategies proved successful, they were more likely to continue using them.

An example of this occurrence was recorded by the teacher-researcher in her field notes. During one class in the final week of data collection, student-participants were divided into four groups of two for partner practice. Each group was assigned a short piece from their method book to practice together and play for the class. As the teacher-researcher observed and listened to the groups discuss how to practice the pieces, most of the conversations revolved around how to approach the pieces and what strategy would work best. Several student-participants advocated chunking small parts whereas others mentioned slowing the tempo or fingering through silently to figure out the correct notes.

The teacher-researcher observed, however, that each student-participant was advocating from the perspective of what the student-participant had tried in his or her own practice context and what he or she had attributed as a strategy that would yield improvement. Danielle, for instance, insisted to her partner, Trent, that “the best way to learn the music is to finger through it because [she] tried it at home and it worked better.” Her success with fingerings during her independent practice increased Danielle’s perception of her ability to self-regulate; thus, she was more willing to try it again.

In this way, attributions made by the student-participants provided a source of motivation to not only select and implement appropriate self-regulating strategies but also evaluate for themselves if the strategies produced the desired long-term result of increased musical achievement. As suggested by Crappell (2013), “Our goal should be to help our students experience regular success, and through that experience, gain a deeper fascination for advanced music study” (p. 15). Accordingly, attributions made by the student-participants reflected a positive stance toward the use and results of self-regulating behaviors.

### **Conclusion**

Overall, themes of increased student-participant awareness, ability, and attributions resonated as key aspects of data collection. Despite modest deficits in the use of evaluation strategies, data collected from the student-participants demonstrated an increase in knowledge and use of self-regulation during their autonomous practice. In addition, the teacher-researcher observed an increase in student-participants’ ability to use self-regulating strategies, which positively impacted musical achievement in class. In keeping with a constructivist approach to pedagogy, McPhail (2013) argued that

“students should be given a wide range of learning experiences and choices to develop self-regulation in learning, and also the tools to evaluate these learning choices intelligently within the accepted and evolving norms . . . of the musical field of practice” (p. 168). To this end, the findings from this study support the inclusion of self-regulating strategies in the beginning instrumental curriculum so that all students can develop the skills to effectively implement these strategies and acknowledge their benefit in the musical learning process.

## **CHAPTER FIVE**

### **DISCUSSION, IMPLICATIONS, AND RECOMMENDATIONS**

Chapter Five of the dissertation begins with a summary of the findings of the study, including a description of the PoP and the research question. Following this description, there is a brief discussion of the data collection instruments and a summary of the findings. Questions that emerged from the study results are then discussed with suggestions for additional research related to self-regulating behaviors. Finally, there is a detailed discussion of an action plan developed by the teacher-researcher in conjunction with the student-participants to share with other teachers of beginning instrumentalists. Following this discussion are concluding remarks about this action research process and specific implications of this study.

Learning to play a musical instrument is arguably a difficult endeavor. More specifically, sixth-grade middle school students who choose to begin group lessons at their school come upon unique challenges that require careful consideration and pedagogical expertise from their music director in order to promote successful musical advancement. This study examined one specific aspect of learning to play an instrument through a school-sponsored music program, namely, learning that occurs apart from the direct supervision of the teacher and how the teacher may be able to positively impact this individual student practice effort.

In the classroom experience of the teacher-researcher, beginning instrumental students appeared to lack the necessary skills to organize, monitor, and evaluate time

spent in practice apart from the class setting. As a result, student progress and musical achievement was confined to ensemble rehearsals, and potentially valuable time was lost when students lacked the skills to address musical elements that were specifically problematic for them. This research explored how music teachers of beginners may positively affect individual student practice time by including instruction during class on how to efficiently and effectively manage self-directed practice time using self-regulated learning strategies.

Engaging the students of today in metacognition and/or reflective thinking may require deliberate action on the part of the teacher to achieve tangible results. Kirylo (2016) suggested, “Thinking that is reflective is more than whatever stream of thought may be flowing through one’s mind; rather, reflective thought—which frees one from acting on impulse or thoughtless routine—enables thoughtful action that is conducted with deliberate purpose” (p. 25). Teaching with deliberate purpose in mind may also assist students with the development of self-regulating behaviors that in turn promote individual achievement. To this end, the research question for this study was, What impact do self-regulating strategies have on the musical achievement perceptions of eight sixth-grade students in a beginning orchestra class at Green Middle School?

### **Overview and Summary of the Study**

The purpose of this study was to examine the impact of self-regulating strategies on the musical achievement perceptions of eight sixth-grade students in a beginning orchestra class at Green Middle School. In the position as a district curriculum writer and lead arts teacher, the teacher-researcher recognized that although the curriculum guide includes detailed scope and sequence of fundamental concepts for beginning string

players, little, if any, attention is given to teaching string students how to structure practice time when they are not in class. As a teacher of beginning string students, the teacher-researcher designed this study to explore if students demonstrated an increase in musical achievement through setting goals, monitoring, and evaluating their practice when self-regulating strategies were specifically taught during class as an integral part of the beginning strings curriculum. Musical achievement was defined as an increase in student perceptions of their ability to self-regulate during autonomous practice as indicated in self-report measures and observed by the teacher-researcher during class.

The teacher-researcher collected data for 6 weeks during the second quarter of the 2016-2017 academic year with a class of beginning cello and bass players in a sixth-grade related arts class at an urban middle school in South Carolina. The eight student-participants were representative of the overall ethnic makeup of the school's student population and consisted of an equal number of males and females. All student-participants were actual beginners with no prior experience playing a string instrument. Each of the student-participants chose to sign up for the class as part of the elective course choices in sixth grade.

The specific data collection instruments in this study surveyed student-participant perceptions of the ability to self-regulate as reported in a pre- and postsurvey on self-regulating behaviors, a pre- and postinterview about student-participant practice, student-participant journals, and student-participant practice records that included the use of self-regulating strategies. Observations by the teacher-researcher, recorded in the form of field notes, further informed the interpretation of the data from the vantage point of behaviors demonstrated during the class.

In response to the research question, the synthesized results of the multiple data sources indicated that the student-participants demonstrated increased perceptions of their (a) awareness of self-regulating strategies, (b) ability to implement self-regulating strategies, and (c) attributions made about the use of strategies. Overall, the findings indicated that the student-participants perceived an increase in individual musical achievement because they were able to recognize, implement, and credit musical successes to the use of self-regulating strategies during personal practice time. Each of the five data sources independently supported these findings from unique perspectives of the student-participants and teacher observations. Although some of the results in subcategories of the self-regulation survey indicated no change or modest decreases in student-participant perceptions, by and large, the data indicated that student-participants benefited from instruction on these strategies.

An important consideration in the findings was the use of collaboration to reinforce self-regulating behaviors. Notably, a working relationship was established between the teacher-researcher and the student-participants to share influence and power over the development of a beneficial student practice chart model (see Appendix D). In doing so, the teacher-researcher encouraged student-participants to establish priorities and strategy examples cooperatively as well as to share personal experiences with self-regulating behaviors in a noncompetitive atmosphere. Supporting the use of this educational environment, Shieh and Allsup (2016) proposed “the idea of the ‘collective’ as the guiding paradigm” as students work with musical form (p. 30). In this context, the broad use of collaboration as a natural extension of self-regulation promoted a more student-centered approach to learning when compared to the traditional music classroom.

Lastly, the findings suggested that the use of self-regulating strategies has broader implications across the curriculum. In detail, these implications included student use of goal-setting, monitoring, and self-evaluation strategies to foster improvement in all subjects thus opening the conversation for music educators to collaborate more extensively with their peers in other subject areas. Spruce and Bol (2015) posited that “Teachers may be unaware of the gaps in their self-regulated learning knowledge and classroom instruction and therefore do not recognize the need for professional development in this area” (p. 270). Since the findings of this research indicated some weakness in students’ abilities to self-assess, teachers of diverse subjects may benefit from sharing ideas directed at strengthening this particular skill thus positioning the music educator as an advocate for the development of transferable skills across the curriculum.

### **Questions and Suggested Additional Research**

As an integral product of the action research process, several questions emerged from the study that support and encourage further inquiry. As generally described for the classroom teacher by Mertler (2014), “These questions require you to take some time to look back at your classroom instructional practice from a new, more enlightened perspective” (p. 215). Such questions also served as the basis for the development of the action plan. Despite seeming contradictory, it is necessary to reflect and look back on the research process in order to determine how best to move forward in the action research process (Mertler, 2014).

Furthermore, the inherent limitations and challenges experienced during the study suggest that further research may facilitate a better understanding and develop more in-



depth knowledge about the PoP. Specifically, the 6-week time frame used for data collection and the small sample size ( $N = 8$ ) limit the analysis to a specific subgroup of all beginning instrumentalists. Using the following questions that stemmed from this action research study and addressing the aforementioned limitations may provide important additional information that expands and/or influences the study of student achievement and self-regulating practice behaviors.

One specific question that emerged from the study at the conclusion of the data collection and interpretation was why most student-participants indicated a perceived increase in musical achievement by using self-regulating strategies during practice but also indicated a less-than-robust ability to employ evaluation strategies, which are one of the primary indicators of self-regulating behavior. This finding may also generate questions that digress into other areas of self-regulation in musical practice aside from the ability to evaluate one's performance activities. These areas may include, but are not limited to, self-efficacy, self-judgement, and the development of aural schemata in children (McPherson & Renwick, 2001).

These findings raise the question, however, of why student-participants appeared to develop a greater capacity for goal setting and self-monitoring during the study than they did for evaluation and assessment. It is quite possible that student-participants receive more support from other teachers across the curriculum for goal-setting and monitoring behaviors than they do for self-evaluation, and therefore they are reluctant or unsure of how to implement evaluation strategies. According to Oare (2011), "To develop self-assessment skills, students need to be taught what to attend to and need to be given guided practice opportunities to assess themselves and others" (p. 46). Through

such guided practice, teachers can beneficially extend the impact of in-class modeling and direct instruction to student practice at home.

Suffice it to say that reflection is an integral part of the practice process. Thus, it may be significant for the teacher-researcher specifically to explore strategies that enable and assist students with reflective and assessing behaviors in subsequent instructional planning. More explicitly, McPherson and Renwick (2001) asserted, “Helping beginning instrumentalists to reflect on their own progress and ability to employ self-regulatory processes may go some way to improving instrumental instruction, especially for children who do not pick up these skills informally” (p. 184). Further research that focuses on assessment and evaluation may also provide additional evidence to ascertain why, in certain situations, beginning musicians indicate difficulty with the skills related to self-assessment.

The question of how students perceive quantity versus quality of self-directed practice also emerged from the findings. Prior to the study, student-participants used practice charts that only required documentation of the amount of time spent in self-directed practice. The focus of the revised practice chart model (see Appendix D) included a narrative of the practice time but did not require students to keep a record of how long they practiced. This raises the question of whether student-participant achievement levels may have been higher if a time component was reinstated. Miksza (2012) found, however, “those participants who reported using self-regulated strategies more frequently also tended to practice for longer amounts of time and considered their practicing to be more formal in nature” (p. 333). Although most student-participants indicated that they preferred not having a required minimum for credit on the practice

chart, several preferred having a time expectation, which may help students structure and pace the various components of individual practice sessions.

Subsequent research into this issue may better clarify the importance of a timed element in practice records with beginning instrumental students. Oare (2011) suggested that “students practicing to fulfill time requirements often play through pieces for the required number of minutes and fail to identify and correct mistakes” and maintained that “students must learn to strive for improvement rather than to simply put in the time” (p. 43). In order to better understand the timed aspect of practice, future research using quantitative, comparative performance assessments with and without a timed component in the practice record may provide a better indication of potential student achievement. In addition, the teacher-researcher can include more specific questions about the aspect of timed practice in poststudy debriefing discussions with the student-participants and in additional action research cycles further investigating the use of self-regulating strategies with the class.

A third question stemming from the study is what possible effect individual levels of motivation may have on the findings. According to Zimmerman (1990),

When a student is aware of self as agent, a sense of self-efficacy, internalized goals for learning, and an experience of competency are produced. In their view, self-regulated learning requires more than cognitive skill; it requires a will or motivational component as well. When students understand that they are creative agents, responsible for and capable of self-development and self-determination of their goals, their self as an agent will provide the motivation necessary for self-regulation. (p. 11)

Students, as unique individuals, naturally possess different levels of intrinsic motivation. Instructional practices that focus on allowing students to set their own goals, make choices about their learning activities, and base decisions on self-identified needs and inclinations are based on a growing recognition that students must be given opportunities to experience autonomy to develop intrinsic motivation (Schunk, 1992). In the context of learning through the use of self-regulating strategies, increased levels of intrinsic motivation may, in turn, affect student achievement. Therefore, it seems appropriate to further examine intrinsic motivation as a direct influence on the self-regulating capacities of beginning instrumental students.

### **Action Plan**

The results of this study support the notion that beginning instrumental students may increase perceptions of musical achievement by using self-regulating strategies when they practice. Using this information, the teacher-researcher has developed an action plan comprised of three specific steps to (a) include instruction on self-regulation in the beginning strings curriculum consistently, (b) share the findings with district string teachers, and (c) conduct additional research based on the questions that emerged during the study. According to Mertler (2014), the action plan outlines how the research will be used and what will be done in the future as a result of the research findings. In addition, persons involved in the action plan, necessary resources, and a suggested time frame are included as essential components of the plan.

The first step of the action plan is to include instruction on self-regulating behaviors consistently in the beginning strings curriculum. In the present district curriculum guide used by the teacher-researcher, there is no reference to such behaviors

or any guidance offered on how to teach students to practice autonomously. During the next 2 years, a new curriculum platform will be implemented by the district, and as one of the former subject-area curriculum writers, the teacher-researcher plans to advocate for the inclusion of practice pedagogies focused on beginning instrumental students.

The writing of each subject-area curriculum is overseen by a committee appointed by an academic specialist at the district office. Although this process was effected several years ago, the current curriculum platform has been largely unsuccessful and seldom used by current teachers. However, the adoption of a new platform presents the opportunity to include new information and teaching strategies available to all district instrumental teachers. Based on the findings of this research study, the teacher-researcher plans to suggest to the committee that strategies based on self-regulating behaviors be integrated into the first level of instrumental instruction to help students develop foundational skills in goal setting, monitoring, and evaluating. If accepted by the committee, the results of this research may be incorporated in future curriculum guides and pacing documents.

As a supplement to the core content of the new curriculum, self-regulating strategies can be incorporated to strengthen students' autonomy and enhance practice efficiency. According to Shieh and Allsup (2016), "An appropriate standard for fostering musical independence might well be the exhortation *that students make musical decisions that matter*, an experiential process that is markedly different than conventional standards about what students should know and do" (p. 31). In poststudy discussions, student-participants agreed that these strategies helped and indicated that they were willing to

include them in subsequent practice assignments made by the teacher-researcher. Thus, students had embarked on an important first step toward fostering musical independence.

The second component of the action plan includes sharing the research findings with other string teachers in the district during a professional development session in the fall of 2017. Each year, one day is set aside by the district for intensive professional development by content area. For teachers in the visual and performing arts, this event consists of four meetings on various arts topics. The teacher-researcher plans to lead one of the sessions and share the findings of this study with the district orchestra staff. By sharing the results with other teachers of beginning students, feedback can be obtained from an insider/outsider perspective that may be beneficial in future action research projects. More specifically, teachers of similar populations and content areas are likely to provide insightful and relevant information about the PoP and are capable of providing additional perspectives on the topic that the teacher-researcher may have failed to consider.

By sharing the results of this study with teachers in the district, it is also hoped that other teachers will be motivated to conduct research on the topic in their own classrooms to add depth and legitimacy to the study of students' perceptions about achievement during personal practice time. Mertler (2014) referred to this process as an action research community, which he defined as “a professional learning community made up of educational professionals driven by a common goal of practicing reflective teaching as a means of improving classroom instructional practice or other aspects of the educational process” (p. 247). Through this process, findings can be further examined for comparison to and expansion of the present study.

It is possible, however, that the teacher-researcher may encounter resistance upon suggesting a significant overhaul to a primary form of assessment for many instrumental teachers—the time-oriented practice log. The revised practice model (see Appendix D) arguably requires more time from students to complete the questions thoroughly and more time from the teacher to read and evaluate the responses. For teachers who are accustomed to scanning practice charts for a time and inputting a quick grade based on that time, the revised model will require a new way of conceptualizing the purpose and desired outcomes of teacher-made practice assignments.

The third component of the action plan includes the teacher-researcher conducting additional research on the PoP with a proposed mixed-method, comparative design over a longer period of data collection with a larger number of participants in order to make generalizations. The nature of the qualitative data collected in the present study yielded important student-participant perceptions about their ability to adapt to a new model of practice using self-regulating practice strategies. However, Metler (2014) suggests, “the results of action research are neither right nor wrong but rather tentative solutions that are based on observations” (p. 21). By reframing this study to include data derived from two similar beginning classes, the teacher-researcher can develop a thicker description of the effect of teaching self-regulation and the potential impact on student achievement. The proposed research trajectory (see Figure 5.1) illustrates how the study would be organized using many of the same data collection instruments as the present study. In addition, factors such as race, gender, and ethnicity are included in the mixed-method analysis to further expand where data can be disaggregated. Future research and replication of this study may also further clarify why, according to Austin and Berg

(2006), “students who establish a productive environment, and who utilize physical and social resources, tend to exhibit more regulatory behaviors” (p. 552). In this setting, the development of self-regulatory skills can be explored according to individual student tendencies that promote self-regulating behaviors.

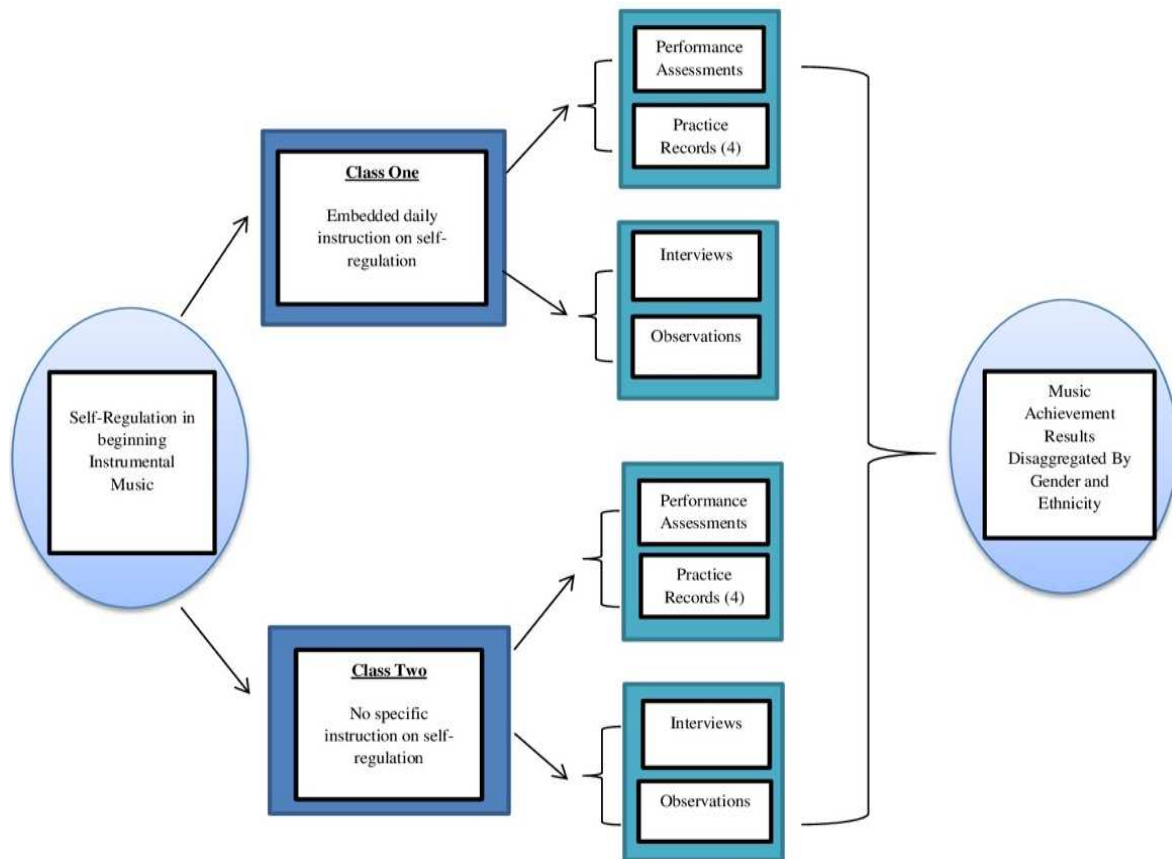


Figure 5.1 Proposed research trajectory

### Conclusion

The goal of teaching is ultimately to cultivate independent learners who are able to actively and successfully manage their own learning (McPhail, 2013). Based on a constructivist pedagogy, teachers are tasked with creating an environment that encourages and bolsters independence in their students. With this purpose in mind, this



study demonstrates that the inclusion and use of self-regulating strategies in independent musical practice is a practical and powerful step teachers can take toward creating autonomy in young musicians.

As a cornerstone of self-regulated learning, reflective practice, whether in the music education setting or general classroom teaching context, is pivotal not only to increased achievement but also to a greater understanding of what drives improvement overall. Finding time for reflection is often either absent or considered nonessential. Kincheloe (1991) maintained,

Teachers are preoccupied with daily survival—time for reflection and analysis seems remote and even quite fatuous given the crisis management atmosphere and the immediate attention survival necessitates. In such a climate those who would suggest that more time and resources be delegated to reflective and growth-inducing pursuits are viewed as impractical visionaries devoid of common sense. Thus, the status quo is perpetuated, the endless cycle of underdevelopment rolls on with its peasant culture of low morale and teachers as “reactors” to daily emergencies. (p. 12)

Reflective practice, far from devoid of common sense, provides opportunities for individual growth in a highly personal context. All who participate in reflective practice are responsive in some capacity to feedback regarding the effectiveness of their learning and are cognizant of their self-perceptions of academic achievement (Zimmerman, 1990). Students and teachers alike can benefit from assuming a reflective stance in pursuit of increased intellectual understanding and improved academic achievement.

Finally, Winston Churchill once said that “we shape our buildings”; thereafter, “[they] shape us” (International Churchill Society, n.d., para. 23). In a paraphrase of this quote, Eisner (2004) posited that “first we design our curriculum, then our curriculum designs us” (p. 9). He inferred that most educators, students, and other stakeholders want a form of educational practice that not only designs learners but also equips learners to design themselves. As demonstrated in this action research study, musical learning provides unique opportunities for students to cultivate cognitive relationships based on goals, self-assessment, and evaluation skills achieved through self-regulated learning. Using these relationships, students can imagine new ways of thinking that are undergirded by teachers’ instruction and are limited only by the individuals’ determination to pursue that which must be discovered for themselves.

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## APPENDIX A

### SELF-REGULATING QUESTIONNAIRE

**Self-Regulating Questionnaire:** Please answer the following questions by circling the response that best describes how you are. If you **STRONGLY DISAGREE** with a statement, circle 1. If you **DISAGREE** circle 2. If you are **UNCERTAIN** or **UNSURE** circle 3. If you **AGREE** circle 4, and if you **STRONGLY AGREE** circle 5. There are no right or wrong answers. Work quickly and don't think too long about your answers.

1. I usually keep track of my progress toward my goals.	1 2 3 4 5
2. My behavior is not that different from other people's.	1 2 3 4 5
3. Others tell me that I keep on with things too long.	1 2 3 4 5
4. I doubt I could change even if I wanted to.	1 2 3 4 5
5. I have trouble making up my mind about things.	1 2 3 4 5
6. I get easily distracted from my plans.	1 2 3 4 5
7. I reward myself for progress toward my goals.	1 2 3 4 5
8. I don't notice the effects of my actions until it's too late.	1 2 3 4 5
9. My behavior is similar to that of my friends.	1 2 3 4 5
10. It's hard for me to see anything helpful about changing my ways.	1 2 3 4 5
11. I am able to accomplish goals I set for myself.	1 2 3 4 5
12. I put off making decisions.	1 2 3 4 5
13. I have so many plans that it's hard for me to focus on any one of them.	1 2 3 4 5
14. I change the way I do things when I see a problem with how things are going.	1 2 3 4 5
15. It's hard for me to notice when I've had enough (food, sweets).	1 2 3 4 5
16. I think a lot about what other people think of me.	1 2 3 4 5
17. I am willing to consider other ways of doing things.	1 2 3 4 5
18. If I wanted to change, I am confident that I could do it.	1 2 3 4 5
19. When it comes to deciding about a change, I feel overwhelmed by the choices.	1 2 3 4 5
20. I have trouble following through with things once I've made up my mind to do it.	1 2 3 4 5
21. I don't seem to learn from my mistakes.	1 2 3 4 5
22. I'm usually careful not to overdo it when working, eating, and playing.	1 2 3 4 5

23. I tend to compare myself with other people.	1	2	3	4	5
24. I enjoy a routine, and like things to stay the same.	1	2	3	4	5
25. I have sought out advice or information about changing.	1	2	3	4	5
26. I can come up with lots of ways to change, but it's hard for me to decide which to use.	1	2	3	4	5
27. I can stick to a plan that's working well.	1	2	3	4	5
28. I usually only have to make a mistake one time in order to learn from it.	1	2	3	4	5
29. I don't learn well from punishment.	1	2	3	4	5
30. I have personal standards, and try to live up to them.	1	2	3	4	5
31. I am set in my ways.	1	2	3	4	5
32. As soon as I see a problem or challenge, I start looking for possible solutions.	1	2	3	4	5
33. I have a hard time setting goals for myself.	1	2	3	4	5
34. I have a lot of willpower.	1	2	3	4	5
35. When I'm trying to change something, I pay a lot of attention to how I'm doing.	1	2	3	4	5
36. I usually judge what I'm doing by the consequences of my actions.	1	2	3	4	5
37. I don't care if I'm different from most people.	1	2	3	4	5
38. As soon as I see things aren't going right I want to do something about it.	1	2	3	4	5
39. There is usually more than one way to accomplish something.	1	2	3	4	5
40. I have trouble making plans to help me reach my goals.	1	2	3	4	5
41. I am able to resist temptation.	1	2	3	4	5
42. I set goals for myself and keep track of my progress.	1	2	3	4	5
43. Most of the time I don't pay attention to what I'm doing.	1	2	3	4	5
44. I try to be like people around me.	1	2	3	4	5
45. I tend to keep doing the same thing, even when it doesn't work.	1	2	3	4	5
46. I can usually find several different possibilities when I want to change something.	1	2	3	4	5
47. Once I have a goal, I can usually plan how to reach it.	1	2	3	4	5
48. I have rules that I stick by no matter what.	1	2	3	4	5
49. If I make a resolution to change something, I pay a lot of attention to how I'm doing.	1	2	3	4	5
50. Often I don't notice what I'm doing until someone calls it to my attention.	1	2	3	4	5
51. I think a lot about how I'm doing.	1	2	3	4	5
52. Usually I see the need to change before others do.	1	2	3	4	5
53. I'm good at finding different ways to get what I want.	1	2	3	4	5
54. I usually think before I act.	1	2	3	4	5
55. Little problems or distractions throw me off course.	1	2	3	4	5
56. I feel bad when I don't meet my goals.	1	2	3	4	5
57. I learn from my mistakes.	1	2	3	4	5

58. I know how I want to be.	1	2	3	4	5
59. It bothers me when things aren't the way I want them.	1	2	3	4	5
60. I call in others for help when I need it.	1	2	3	4	5
61. Before making a decision, I consider what is likely to happen if I do one thing or another.	1	2	3	4	5
62. I give up quickly.	1	2	3	4	5
63. I usually decide to change and hope for the best.	1	2	3	4	5

## APPENDIX B

### SELF-REGULATION QUESTIONNAIRE SUBSCALE OF BEHAVIORAL SELF-REGULATION

Item	Subscale	R
1. I usually keep track of my progress toward my goals.	Receiving	
2. My behavior is not that different from other people's.	Evaluating	R
3. Others tell me that I keep on with things too long.	Triggering	R
4. I doubt I could change even if I wanted to.	Searching	R
5. I have trouble making up my mind about things.	Planning	R
6. I get easily distracted from my plans.	Implementing	R
7. I reward myself for progress toward my goals.	Assessing	
8. I don't notice the effects of my actions until it's too late.	Receiving	R
9. My behavior is similar to that of my friends.	Evaluating	
10. It's hard for me to see anything helpful about changing my ways.	Triggering	R
11. I am able to accomplish goals I set for myself.	Searching	
12. I put off making decisions.	Planning	R
13. I have so many plans that it's hard for me to focus on any one of them.	Implementing	R
14. I change the way I do things when I see a problem with how things are going.	Assessing	
15. It's hard for me to notice when I've had enough (food, sweets).	Receiving	R
16. I think a lot about what other people think of me.	Evaluating	
17. I am willing to consider other ways of doing things.	Triggering	
18. If I wanted to change, I am confident that I could do it.	Searching	
19. When it comes to deciding about a change, I feel overwhelmed by the choices.	Planning	R
20. I have trouble following through with things once I've made up my mind to do something.	Implementing	R
21. I don't seem to learn from my mistakes.	Assessing	R
22. I'm usually careful not to overdo it when working, eating, playing.	Receiving	
23. I tend to compare myself with other people.	Evaluating	



24. I enjoy a routine, and like things to stay the same.	Triggering	R
25. I have sought out advice or information about changing.	Searching	
26. I can come up with lots of ways to change, but it's hard for me to decide which one to use.	Planning	R
27. I can stick to a plan that's working well.	Implementing	
28. I usually only have to make a mistake one time in order to learn from it.	Assessing	
29. I don't learn well from punishment.	Receiving	R
30. I have personal standards, and try to live up to them.	Evaluating	
31. I am set in my ways.	Triggering	R
32. As soon as I see a problem or challenge, I start looking for possible solutions.	Searching	
33. I have a hard time setting goals for myself.	Planning	R
34. I have a lot of willpower.	Implementing	
35. When I'm trying to change something, I pay a lot of attention to how I'm doing.	Assessing	
36. I usually judge what I'm doing by the consequences of my actions.	Receiving	
37. I don't care if I'm different from most people.	Evaluating	R
38. As soon as I see things aren't going right I want to do something about it.	Triggering	
39. There is usually more than one way to accomplish something.	Searching	
40. I have trouble making plans to help me reach my goals.	Planning	R
41. I am able to resist temptation.	Implementing	
42. I set goals for myself and keep track of my progress.	Assessing	
43. Most of the time I don't pay attention to what I'm doing.	Receiving	R
44. I try to be like people around me.	Evaluating	
45. I tend to keep doing the same thing, even when it doesn't work.	Triggering	R
46. I can usually find several different possibilities when I want to change something.	Searching	
47. Once I have a goal, I can usually plan how to reach it.	Planning	
48. I have rules that I stick by no matter what.	Implementing	
49. If I make a resolution to change something, I pay a lot of attention to how I'm doing.	Assessing	
50. Often I don't notice what I'm doing until someone calls it to my attention.	Receiving	R
51. I think a lot about how I'm doing.	Evaluating	
52. Usually I see the need to change before others do.	Triggering	
53. I'm good at finding different ways to get what I want.	Searching	
54. I usually think before I act.	Planning	
55. Little problems or distractions throw me off course.	Implementing	R
56. I feel bad when I don't meet my goals.	Assessing	

57. I learn from my mistakes.	Receiving	
58. I know how I want to be.	Evaluating	
59. It bothers me when things aren't the way I want them.	Triggering	
60. I call in others for help when I need it.	Searching	
61. Before making a decision, I consider what is likely to happen if I do one thing or another.	Planning	
62. I give up quickly.	Implementing	R
63. I usually decide to change and hope for the best.	Assessing	R

Scoring:

239+ High self-regulation capacity (top quartile)

214-238 Intermediate self-regulation capacity (middle quartiles)

213-Low self-regulation capacity (bottom quartile)

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*Note.* Development of the Self-Regulation Questionnaire (SRQ) was supported in part by Grant # P183C80007 from the U.S. Department of Education Fund for the Improvement of Post-Secondary Education. The SRQ is in the public domain and may be freely used, adapted, and reproduced without special permission. Items designated by R should be reverse scaled. The SRQ was adapted for this study for use with sixth-grade students.

## APPENDIX C

### INTERVIEW GUIDE

#### **Interviews with sixth-grade students:**

##### General Practice Questions:

- Do you believe practice helps?
- How do you feel about practicing your instrument?
- Do you believe that you will be a better player if you practice?

##### Use of Practice Strategies:

- Do you organize your practice time? If so, how?
- Do you use any strategies in practice? If so, what are they?
- Do you believe using strategies makes practicing more successful?

##### General Practice Attitude Questions:

- Do you enjoy playing your instrument?
- Is practicing fun?
- Do you think you would learn music faster if you practiced more?
- Why is practicing valuable?

## APPENDIX D

### STUDENT PRACTICE CHART

<b>Name:</b>	<b>Dates:</b>
<p><b><u>My Practice Plan:</u></b> Circle the days you will practice. Select at least four (4) days:  M   T   W   TH   F   S   SU</p>	<p><b>Music selected for practice:</b>  1)  2)  3)  Other</p>
<p><b><u>Making My Musical Goal:</u></b></p> <p><input type="checkbox"/> Play all the right notes in the pieces I'm practicing.</p> <p><input type="checkbox"/> Play with a really nice-sounding tone on my instrument.</p> <p><input type="checkbox"/> Play the right rhythms in the pieces I'm practicing.</p> <p><input type="checkbox"/> Other: (write it here)</p>	<p><b>Why did I pick the goal I did?</b></p>
<p><b><u>Monitoring My Practice:</u></b></p> <p>What is giving me trouble? <span style="float: right;">→</span></p> <p>Strategies used:</p> <p><input type="checkbox"/> Chunking (small sections or measure)</p> <p><input type="checkbox"/> Slowing it down till I can play it</p> <p><input type="checkbox"/> Clapping rhythm, fingering only</p> <p><input type="checkbox"/> Other practice strategy <span style="float: right;">→</span></p>	
<p><b><u>Thinking About How I Did:</u></b></p> <p><input type="checkbox"/> I focused and worked on my goal.</p> <p><input type="checkbox"/> I put the time in but did not focus.</p> <p><input type="checkbox"/> Next time I will do the assignment!</p>	<p><b>What part of your playing improved while working on the goal? Be specific!</b></p>

APPENDIX E  
FIELD NOTES PAGE

DATE AND TIME	OBSERVATION	COMMENTS

APPENDIX F  
PARENTAL CONSENT FORM

October 5, 2016

Dear Parent or Guardian,

The School District of Greenville County periodically asked students to complete tests, surveys, and questionnaires to gather information about various topics pertaining to learning and student engagement. During the school year, I will be using a student survey, student interviews, and journal entries to gather information about your child's attitude toward practicing. These are very important sources of data that will help me promote better practice habits and student engagement in the classroom. This information will be used in my dissertation in practice for my doctoral degree at the University of South Carolina. Your agreement and your child's participation in the study are completely voluntary. Please read the following information about the study and sign the form below:

**Survey Content**

The surveys, interviews and journal entries gather information on and about your child's attitudes toward practicing their instrument on their own.

**It is Voluntary**

Your child does not have to take the survey or be interviewed. Students who participate only have to answer the questions they want to answer and they may stop talking at any time without penalty. Students may provide whatever information they are comfortable providing.

**It is Anonymous and Confidential**

The survey, interviews, and journal entries will be kept confidential (not seen by others) and anonymous (no names will be recorded and/or attached to the survey forms or data—Students cannot be identified).

**Benefit of the Study**

The study will help teachers plan and/or learn more about how to design activities to improve your child's ability to practice effectively on their own without the teacher present.

**Potential Risks**

There are no known risk of physical harm to your child. Your child will not have to answer any questions unless s/he wants to.

**Survey Review (for surveys)**

Beginning September 19, 2016, a copy of the survey will be available for previewing by contacting Mrs. Anne Matthews at 864-355-5654 or [amatthew@greenville.k12.sc.us](mailto:amatthew@greenville.k12.sc.us)

**For Further Information**

Please call Mrs. Anne Matthews at 864-355-5654 or [amatthew@greenville.k12.sc.us](mailto:amatthew@greenville.k12.sc.us)

Please sign and return to me by, October 12, 2016.

\_\_\_\_\_

Name of Child \_\_\_\_\_

I do want my child to participate: \_\_\_\_\_

Parent/Guardian signature

Date

I do not want my child to participate: \_\_\_\_\_

Parent/Guardian signature

Date

APPENDIX G  
STUDENT ASSENT FORM

October 05, 2016

Dear Orchestra Student,

The School District of Greenville County sometimes asked students to complete tests, surveys, and questionnaires to gather information about various topics about learning. This year, I will be using a survey, interviews, and journal entries to gather information about how you feel about practicing. These are very important sources of information that will help me be a better orchestra teacher and help you as a musician. This information will be used in a paper for my doctoral degree at the University of South Carolina. Please read the following information and sign the form below:

**Survey Content**

The surveys, interviews and journal entries gather information on your attitudes toward practicing your instrument.

**It is Voluntary**

You do not have to take the survey or be interviewed. If you participate you only have to answer the questions you want to answer and you may stop talking at any time without penalty. Students may provide whatever information they are comfortable providing.

**It is Anonymous and Confidential**

No one will see the survey, interviews, and journal entries and I will never use your name so no one can be identified.

**Benefit of the (Survey) (Study) (Field Trip) (Fill in the blank)**

The study will help teachers plan and/or learn more about how to design activities to improve your ability to practice effectively on your own without the teacher present.

**Potential Risks**

There are no known risks of physical harm to you. You will not have to answer any questions unless s/he wants to.

**Survey Review (for surveys)**

Beginning September 19, 2016, a copy of the survey will be available for previewing by contacting Mrs. Anne Matthews at 864-355-5654 or [amatthew@greenville.k12.sc.us](mailto:amatthew@greenville.k12.sc.us)

**For Further Information**

Please call Mrs. Anne Matthews at 864-355-5654 or [amatthew@greenville.k12.sc.us](mailto:amatthew@greenville.k12.sc.us)



Sincerely,

Mrs. Anne Matthews, orchestra director

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Signed \_\_\_\_\_ Date \_\_\_\_\_