A Mixed Methods Investigation of Flow Experience in the Middle Level Instrumental
Music Classroom

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ABSTRACT

A Mixed Methods Investigation of Flow Experience in the Middle Level Instrumental

Music Classroom

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Flow theory (Csikszentmihalyi, 1990) has potential to frame research on the quality of a student's experience in the classroom. The purpose of this mixed method study was to explore selected factors that may impact a student's frequency of flow experiences in a middle school band and how these flow experiences may relate to achievement and enjoyment. A convergent parallel mixed methods design was employed in which quantitative and qualitative data were collected concurrently, analyzed separately, and then merged. Quantitative data were collected in the form of repeated surveys of students in four classrooms; the qualitative method of inquiry was a case study of an eighth grade band. Results of a hierarchical linear modeling (HLM) analysis indicated that the factors of type of activity, self-determination, and a match between teacher and student perception of a student's self-efficacy were significant predictors of the balance between challenge and skill, or the *flow channel*. Results from the qualitative data analysis suggested that the teacher and students bring their own values, beliefs, and needs to create an overall band culture. The intent of the band culture is to create intrinsically motivated musicians. A continuum of flow opportunity was theorized; students move back and forth along the continuum based on their individual development. Merged data indicated convergence and divergence between the

quantitative and qualitative data. Further research to explore developmentally

appropriate and meaningful measures of flow for middle school students is

recommended, along with expanding the sample when studying flow experiences (with

quantitative, qualitative, or mixed methods designs).

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CHAPTER ONE: INTRODUCTION TO THE STUDY

As both a performer and a music educator, I have experienced physical and emotional responses when playing, conducting, or listening to music. While I can describe the physical or emotional reaction to music, such as being moved to tears or having the hairs on the back of my neck stand up, it is hard to explain *why* the music made these responses happen. As a performer, I have experienced moments when everything seems effortless – my fingers move with ease in a difficult passage, my breathing aligns perfectly with the musical phrase, or my playing is in perfect rhythm with the people around me. Standing in front of an ensemble as a conductor, I have experienced moments when my gesture and the musical response of the students sitting before me are perfectly in sync. In those moments, I am not worried about the printed notes in the score or whether my students will perform at the same level that they did in rehearsals. My concentration is focused completely *on* the moment and *in* the moment. These feelings and responses remain in my memory even after forgetting the exact music performed or the time and place of the original experience. As a music educator, I hope that my students have similar feelings and responses to music, echoing Reimer's (1995) statement: "music means so much to us [music educators] because it has moved us deeply, and I believe our zeal for music education stems, ultimately, from our desire to help others be so moved" (p. 16).

Theoretical Framework – Flow

My personal descriptions of music performance are analogous to descriptions of peak experiences (Maslow, 1962), profound musical experiences (Reimer, 1995), or flow

experiences (Csikszentmihalyi, 1990). The theoretical framework of flow

(Csikszentmihalyi, 1990) serves as the foundation of this study. The use of a theory in

research provides a structure for shaping the direction of a study, from forming the

research questions to gathering data to interpreting the results (Creswell, 2011; S.

Schensul, Schensul, & LeCompte, 2013). In order to familiarize the reader with the

conceptual framework for this study, flow theory will be introduced in this section; a

more complete description of flow theory will be presented in Chapter Two.

Emerging from psychologist Mihalyi Csikszentmihalyi's early research on

intrinsically rewarding activities in the 1970s, flow theory has developed and been

applied to a number of different activities and contexts. After analyzing survey and

interview data from rock climbers, chess players, composers, dancers, basketball players,

surgeons, and college students, Csikszentmihalyi (1975) posited that people felt their

chosen activity was rewarding in and of itself, or autotelic (M. Csikszentmihalyi &

Csikszentmihalyi, 1988). He coined this autotelic experience as flow (Csikszentmihalyi,

1990).

Nine different factors, when considered together, contribute to one's flow

experience (Csikszentmihalyi, 1990; M. Csikszentmihalyi & Csikszentmihalyi, 1998;

Jackson, Eklund, & Martin, 2010). Perhaps the most familiar aspect of flow theory is the

balance between the challenge of the task at hand and the person's skill level. As one's

skill increases, the challenge must increase so that the flow experience can continue. If

the challenge does not increase, the person will become bored with the activity. If the

activity is too challenging, the person may experience anxiety and need to either reduce

the level of challenge or increase her skill. This perfect balance between challenge and

skill is referred to as the *flow channel* (Csikszentmihalyi, 1990) and is similar to

Vygotsky's (1978) idea of the zone of proximal development: "the level in which most

learning occurs is just one step beyond the skills one has already mastered" (Shernoff &

Csikszentmihalyi, 2009, p. 132). Other factors that contribute to a flow experience are: a

merging of action and awareness (e.g., automaticity); clear goals; unambiguous feedback;

deep concentration on the task; a sense of control or empowerment; a loss of self-

consciousness of what the body may look like; a sense that time has either stopped,

slowed, or sped up; and an intrinsic motivation to seek out the experience again (i.e., an

autotelic experience) (Csikszentmihalyi, 1990; M. Csikszentmihalyi & Csikszentmihalyi,

1998; Jackson et al., 2010). The flow experience has been described as "being in the

present moment" (Jackson et al., 2010, p. 8); flow experiences have been described as

restful, liberating, enjoyable, exhilarating, and energizing (McGonigal, 2011; Turino,

2008). Csikszentmihalyi (1990) described flow as optimal experiences and stated

activities that promote flow can lead to growth, discovery, and learning.

Middle School and the Young Adolescent

In late elementary school or middle school, young adolescent students (ages 11-

14) typically have the first opportunity to receive instruction on a band or orchestra

instrument. They learn the technical demands of the instrument as well as musical

concepts and how to play in an ensemble with other students. While middle school may

not be the first occasion where students can have a flow experience in a music setting, it

is the first possible opportunity for flow in a large instrumental ensemble for most students.

At the same time that young adolescents are learning a musical instrument in school, they are also progressing through a period of critical development (Hargreaves, Earl, & Ryan, 1996). Mertens, Anfara, and Caskey (2007) explain that young adolescents undergo physical, intellectual, moral, emotional, and social changes during middle school. In a synthesis of brain research, Caskey and Ruben (2007) summarized that the adolescent brain is "under construction" (p. 54) as the prefrontal cortex, hippocampus, and amygdala are not fully formed until adulthood. These areas of the brain concern one's ability to plan, reason, control, remember, learn, and regulate emotions.

A number of generalizations regarding young adolescents' developmental changes exist. For example, young adolescents want to be autonomous but may lack the skills to do so. Their behavior is often erratic and inconsistent through no fault of their own and they may respond intensely to the social events that occur around them (Bishop & Pflaum, 2005). Peer group affiliations and identity are important in middle school as well (Hargreaves et al., 1996); middle school students like to socialize. Lounsbury and Clark (1990) stated that young adolescent socialization "is a developmental need that is necessary for healthy emotional growth" (p. 6). These social interactions have "tremendous influence on the development of young adolescents" (Mee, 1997, p. 8), more so than the subject matter or curriculum (Bishop & Pflaum, 2005).

While young adolescents are expressing the need for independence from adults, they also require great support from adults (Hargreaves et al., 1996). Cook-Sather and Schultz (2001) stated that young adolescents "are looking for care, respect, and support from their teachers, peers, and others who influence their educational experiences" (p. 3); these positive interactions promote resiliency (Juvenon, Le, Kaganoff, Augustine, & Constant, 2004). Hargreaves et al. summarized the role of teachers in middle school:

> the needs of early adolescence are complex, crucial and challenging for anyone entrusted with the onerous responsibility of meeting them. This challenge is to meet their personal, social and developmental needs and establish the implications of their educational experiences for them as future adult citizens. (p. 17)

A Carnegie Foundation report, *Turning Points 2000,* defined the purpose, aims, and goals of middle school education:

> The main purpose of middle grades education is to promote young adolescents' intellectual development. It is to enable every student to think creatively, to identify and solve meaningful problems, to communicate and work well with others, and to develop the base of factual knowledge and skills that is the essential foundation for these "higher order" capacities. As they develop these capacities, every young adolescent should be able to meet or exceed high academic standards. Closely related goals are to help all students develop the capacity to lead healthful lives, physically and mentally; to become caring, compassionate, and tolerant individuals; and to become active, contributing citizens of the United States and the world. But above all else, and to enable all these other goals to be

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realized, middle grades schools must be about helping all students learn to use their minds well." (Jackson & Davis, 2000, pp. 10-11).

To summarize, middle schools should meet the needs of young adolescents while preparing them for adulthood. The Partnership for 21st Century Skills (2011) stated that students will be better prepared for today's workforce if they learn to communicate with others, to collaborate, and to think critically and creatively.

Middle schools serve as places of transition between elementary and high school, and are specifically designed for young adolescents as they traverse through the developmental changes described in the preceding paragraphs. The first middle schools appeared as early as 1910 in the United States and were called junior high schools (Juvenon et al., 2004). Their purpose was to offer "a richer curriculum than the elementary school was able to offer and a more personal atmosphere than the high school was able to develop" (George & Alexander, 2003, p. 347). However, by the 1980s, research led by Lipsitz (1977) and the Carnegie Council on Adolescent Development (1989) indicated that middle school curricula was not "richer," as described by George and Alexander (2003), and the organization of middle schools (e.g., scheduling) resembled that of high schools. As a result, new approaches to middle school were implemented by teachers and administrators. For example, students were grouped into "houses," "clusters," "pods," or "schools within schools" to promote a sense of connectedness and community (Bishop & Pflaum, 2005; Juvenon et al., 2004). Other approaches included pairing students with teachers for advisory programs, interdisciplinary and team teaching, and flexible scheduling. These changes came to be

known as the "middle school concept" (Juvenon et al.) or, as referred to in my own teaching experience, "middle school philosophy."

Statement of the Problem

When performing, conducting, creating, or listening to music, a person can experience flow (Csikszentmihalyi, 1990; Elliott, 1995; Lowis, 2002; Reimer, 2003; Sawyer, 2006). As music teachers, many of us have experienced flow and hope that our students will experience flow as well. However, Reimer (1995) stated:

> We know too little about it [flow and music experience] because we have not examined sufficiently, with the seriousness and carefulness it deserves, the issue of how music education practices might affect, directly and significantly, the depth of musical experience we hope our students will attain. (p. 16)

Research suggests that teachers and, more specifically, music teachers contribute to the flow experiences of their students. For example, Kraus (2003) concluded that the large ensemble conductor made curricular decisions and controlled the pacing of the rehearsal, which in turn, affected the self-reported flow experience of the musicians. However, while the music teacher may create the opportunity and access for flow to occur, little is known about other factors in the rehearsal room that may contribute to, or hinder, flow. Furthermore, with the existing literature focusing more on high school, college, or adult level musicians, little is known about flow experiences of middle school musicians enrolled in instrumental music classes.

The paucity of literature regarding young adolescents' flow experiences in music parallels the sentiment that middle schools are lacking in their service to young

adolescents. Over 30 years ago, Lipsitz (1977) declared the young adolescent population to be "underserved" and little has changed since her statement (Knowles & Brown, 2000; Lounsbury & Clark, 1990; Stevenson, 2002). A 1989 report by the Carnegie Council on Adolescent Development found that a "volatile mismatch exists between the organization and curriculum of middle grades schools, and the intellectual, emotional, and interpersonal needs of young adolescents" (pp. 8-9). Stevenson (2002) stated: "In spite of such compelling evidence, however, too many educators have remained reluctant to change. Some merely pay lip service to reform or only make isolated, short-lived, and piecemeal attempts to change their schools" (p. 14). Today, this mismatch is further exacerbated by reform efforts such as No Child Left Behind and teacher accountability (Juvenon et al., 2004).

Eccles et al. (1993) stated that one way middle schools fail students is by structuring middle schools schedules to resemble those at the high school level. They argued that the structural change from elementary school to middle school - as students move from subject to subject and teacher to teacher within a pre-determined time schedule - does not match the developmental needs of young adolescents. This results in a perceived decline in "motivation, interest, performance, and behavior" when students begin middle school (p. 91). In other words, if the structure of middle schools were different, young adolescents' levels of motivation, interest, performance, and behavior should remain the same as they move from elementary school to middle school.

Hargreaves et al. (1996) argued that students in middle schools are not being challenged by the curriculum. Challenge, in this context, means that students should

have "relevant" and "real mastery" over the subject matter (p. 84). Feelings of challenge and flow are inextricably linked, as the balance between one's perceived challenge and skill level is a dimension of flow. Moneta and Csikszentmihalyi (1996) found that students who felt appropriately challenged at school reported higher levels of concentration, desire to participate in classroom activities, feelings of involvement and happiness, in addition to experiencing flow. Schmidt, Shernoff, and Csikszentmihalyi (2007) found positive relationships between students' perceived sense of challenge, importance, concentration, and autonomy with feelings of interest, enjoyment, control, and involvement. Shernoff, Csikszentmihalyi, Schneider, and Steele Shernoff (2003) found that students were more likely to experience flow in classes that were interactive, challenging, and had enjoyable tasks; however, over 80% of the school day was spent in non-interactive activities. The National Research Council (2004) described flow as "optimal challenge" and stated: "this principle of 'optimal challenge' may be the most important – as well as the most commonly violated. It is violated because it requires considerable skill and is difficult to implement in a classroom of students with varying skill levels" (p. 44). Shernoff (2013) suggested that class size could be an obstacle to creating opportunities for optimal challenge.

Teachers of performance ensembles often have larger class sizes than their colleagues who teach other subjects. In addition, instrumental music teachers must contend with the fact that their students are not all challenged in the same way at the same time because of the idiosyncrasies of various instruments or the orchestration of the music being rehearsed. Music educators face additional pressures as instructional time,

financial resources, and staffing are subjected to continual budgetary cuts and legislative

mandates such as the No Child Left Behind Act (Campaign for America's Future, n.d.;

Von Zastrow, 2004). An examination of factors that contribute to flow experiences in

instrumental music may help music educators plan for "the depth of musical experience

we hope our students will attain" (Reimer, 1995, p. 16) despite the difficulties that exist

within the middle school setting.

Need for the Study

The present study aims to extend the understanding of students' flow experiences

in the large ensemble setting. Reimer (1995) stated that performance "offer[s]

remarkably potent opportunities for the experience of flow to occur in connection with

musical experience being undergone intimately and absorbedly" (p. 15). He called for

empirical research in this area, referring to flow as "profound experiences:"[1]

> In the matter of individuals who experience music we need to know much more
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> than we do about the content of their reported profound experiences at different
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> ages, in different musical/cultural contexts, under a variety of impinging
>
> conditions, and about how these interrelate with their musical backgrounds, their
>
> personality types, their level of acquaintance with the triggering music, and so
>
> forth, so that our background of descriptive data can begin to be sifted for useful
>
> correlations. (p. 17)

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[1] A more detailed description of Reimer's views on flow and music experience will be
explored in Chapter Two.

Researchers have examined the factors of age (Chen-Hafteck & Schraer-Joiner, 2011; Custodero, 1997, 2005; Kraus, 2003; Sinnamon, Moran, & O'Connell, 2012), teacher or conductor influence (Diaz & Silveira, 2012; Freer, 2008; Kraus, 2003, Marotto, Roos, & Victor, 2007), type of music experience (Diaz & Silveira, 2012; O'Neill, 1999; Smolej Fritz & Avsec, 2007), and perceived preparation and skill (Cassie, 2011; Clementson, 2013; Montanez, 2011) on flow experiences. When comparing the flow experiences of musicians grouped by age or level of experience, Kraus (2003) and Sinnamon et al. (2012) found that older musicians (i.e., graduate students) reported being in flow more often than younger students (i.e., undergraduate or high school students). The teacher or conductor of the large ensemble influences the quality of the student experience through curricular and repertoire decisions and instructional pacing (Diaz & Silveira, 2012; Freer, 2008; Kraus, 2003, Marotto et al., 2007). Researchers who examined a variety of music-related activities (Diaz & Silveira, 2012; O'Neill, 1999; Smolej Fritz & Avsec, 2007) found that participants rated performance in ensembles as one of the highest flow-inducing activities. Finally, students who felt physically or mentally prepared reported high occurrences of flow (Montanez, 2011) and Cassie (2011) found that personal skill was a significant predictor of flow experience.

Research efforts regarding flow and music study have increased over the past two decades, as researchers have used flow theory as a conceptual framework for studying the experience of students in bands, choirs, or orchestras; individual or small ensemble practice and performance; early classroom music; and for students engaged in composition tasks (e.g., Kraus, 2003; Jaros, 2008; Marotto et al., 2007; Sinnamon et al.,

2012; Custodero, 2005; Byrne, MacDonald, & Carlton, 2003). Despite this, there are few studies that have examined the application of flow theory specifically in middle school large ensembles. The present study will focus on flow in the middle school band and will examine factors that have been thus far ignored in the literature. Specifically, this study will examine the culture and context of the large ensemble and how young adolescents may experience flow during this period of rapid developmental change.

A few researchers have approached the study of flow in ensembles through interviews and using case study methods (Freer, 2009; Kraus, 2003; Marotto et al., 2007, Montanez, 2011; Sutton, 2004). Freer (2009), Montanez (2011), and Sutton (2004) conducted interviews with students or musicians who were part of an ensemble to identify factors that may facilitate flow experiences. Sutton's (2004) focus was specifically on group flow experience, rather than individual experience within the group. He found that the following factors to influenced group flow: trust and friendship, the role of the audience, feelings of ownership of the music being performed, preparation, and the absence of an overpowering ego in the group. Montanez (2011) interviewed band students who had reported high levels of flow on a Likert-type response survey. Although these students said that a supportive environment facilitated flow, Montanez's study revealed the limits of only using interviews as a qualitative form of data. Csikszentmihalyi, Larson, and Prescott (1977) argued that data from an interview "is limited because it does not deal with adolescents in their natural milieu. The information it provides is a step removed from the subjects' interaction with the materials and social environment" (p. 282). Researchers who engage in multiple types of qualitative data

collection, such as Kraus' (2003) and Marotto et al. (2007)'s case studies of a collegiate wind ensemble and collegiate orchestra, respectively, provide a deeper understanding of flow in these contexts.

Other researchers have approached flow studies using quantitative methods, such as self-report surveys or the Experience Sampling Method, described below. Researchers who used surveys to ascertain the frequency of flow experiences in music students (e.g., Clementson, 2013; Diaz & Silveira, 2012; Sinnamon et al., 2012; Smolej Fritz & Avsec, 2007) were able to report descriptive or correlational data. For example, Smolej Fritz and Avsec (2007) correlated the responses from a survey about flow with surveys that measured life satisfaction and positive and negative affect. They found that the flow dimensions of balance between challenge and skill, merging of action and awareness, and intrinsic motivation significantly correlated with life satisfaction and affect. Smolej Fritz and Avsec concluded that flow experience is related to well-being. The surveys described here, however, were only administered on a single occasion; according to Moneta (2012), survey research alone does not account for the complex nature of flow.

Another quantitative approach to measuring flow is the Experience Sampling Method (ESM). Although there are many variations of ESM, participants generally provide a written response to a series of questions when they are signaled by some sort of electronic device (e.g., a pager) over a predetermined period of time (e.g., one week). By providing multiple responses to the same questions, potential fluctuations in one's cognitive or emotional states can then be linked to other factors, such as demographic characteristics (Schmidt et al., 2007). Jaros (2008) and O'Neill (1999) used ESM in their

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research on flow with music students. Jaros (2008) compared ESM responses of choral students in a summer honors ensemble over time, to previous singing experience, and to gender. O'Neill (1999) measured and compared the flow experiences of three groups of high school music students. Both Jaros and O'Neill used an analysis of variance (ANOVA) to determine statistical significance. However, because ESM data are nested, with repeated measures nested in participants, they often violate the assumptions needed for ANOVA.

One solution to analyzing nested ESM data is using hierarchical linear models, or HLM (Raudenbush & Byrk, 2002). Schmidt et al. (2007) explained the benefits of HLM: "HLM is ideal for analyzing repeated measures of participants, solving the unit-of-analysis problem that can occur, estimating appropriate standard errors, and appropriately weighting units by the reliability of the information they provide" (pp. 547-548). Schmidt et al. analyzed 8,298 ESM self-report forms from 372 high school students using HLM in order to demonstrate the potential of this statistical procedure. To determine what factors had a positive relationship to flow, a number of variables were added to the multilevel model at both the response-level (e.g., time of day or type of activity) and the person-level (e.g., gender or self-esteem) in various stages of analysis. After examining the significant relationships, Schmidt et al. constructed a final, comprehensive model that "appeared to have the greatest predictive power based on the previous analyses, while excluding significant overlap among predictors" (p. 552).

The present mixed methods study aims to fill the gap in the existing literature on flow in music settings in three ways. First, by including young adolescent students for

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the sample, this study will provide more information about the flow experiences in this age group. Second, by coupling a qualitative case study with a quantitative Experience Sampling Method of data collection, this study will provide a more complete understanding of flow in middle school instrumental music settings. Third, by employing hierarchical linear modeling for statistical analysis, this study will provide more information regarding the interaction between individual students and the factors that may influence their flow experiences.

<div align="center">**Purpose of the Study and Research Questions**</div>

The purpose of this mixed methods study was to explore selected factors that may impact a student's frequency of flow experiences in a large group rehearsal setting and how these flow experiences may relate to achievement and enjoyment in a middle school band. The research questions are as follows:

Quantitative Questions:

1. Do students report experiencing enjoyment during class?

2. Do students report experiencing the flow dimension of the balance between challenge and skill during class?

    a. How does the balance between challenge and skill relate to the type of classroom activities?

    b. How does the balance between challenge and skill relate to the classroom environment?

    c. How does the balance between challenge and skill relate to students' performance ability?

3. To what extent does the teacher's perception of student self-efficacy relate to an individual student's self-efficacy?

    a. How does the balance between challenge and skill relate to the match of teacher perception and student perception of student self-efficacy?

Qualitative Guiding Question: In what ways does the culture of the ensemble impact student flow experiences?

1. In what ways do the nine dimensions of flow manifest themselves in the students' descriptions of middle school band?

2. How does the developmental level of the young adolescent inform their descriptions of flow in middle school band?

Mixed Methods Question: To what extent do the quantitative results on flow and enjoyment in the classroom intersect with the perceptions of flow shared by students?

Mixed Methods as an Avenue of Research

Based on a pragmatist worldview (Creswell & Plano Clark, 2011), advocates of mixed methods research take a practical approach to research design by placing the research questions at the fore and then determining what data are required to answer the research questions (Greene & Hall, 2010; Teddlie & Tashakkori, 2009). Creswell and Plano Clark stated: "oftentimes research questions are posed that require both an exploration as well as an explanation drawing from different data sources" (p. 17). They defined mixed methods as follows:

Mixed methods research is a research design with philosophical assumptions as well as methods of inquiry. As a methodology, it involves philosophical

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assumptions that guide the direction of the collection and analysis and the mixture

of qualitative and quantitative approaches in many phases of the research process.

As a method, it focuses on collecting, analyzing, and mixing both quantitative and

qualitative data in a single study or series of studies. (Creswell & Plano Clark,

2007, p. 5, as cited in Creswell & Plano Clark, 2011, p. 5)

The reason for choosing a mixed methods approach for the present study was to provide a more complete understanding of flow experiences in middle school instrumental music classrooms. Specifically, Creswell and Plano Clark (2011) explained that limitations inherent in quantitative and qualitative approaches can be offset by the strengths of each approach when combined (p. 8). In the context of this study, two potential deficiencies would have existed had I determined to take a singular approach to research design and data collection. First, student perspectives are often ignored in education research (Bishop, Allen-Malley, & Brinegar, 2007; Doll, Spies, & Champion, 2012; Shernoff, 2013; Yair, 2000). Instead, researchers often rely on their own perceptions of events or the teacher's perspective; these adult interpretations often do not match the students' perspectives (Doll et al., 2012), nor do they provide accurate and "true" information (Shernoff, 2013; Yair, 2000). Bishop et al. (2007) pointed out that "only recently have educational researchers considered student voice to be a worthwhile and substantive addition to the educational dialogue" (p. 94). While I collected both quantitative and qualitative data from the student participants, the use of a qualitative case study greatly enhanced the presence of the student voice in the results and interpretation of this study.

Second, previous studies of flow often relied on a singular method and, therefore, only a partial view of flow experience was considered. In addition to the limitations of using a single method, such as survey research described in the previous section, Martin and Jackson (2008) stated: "any attempt to quantify an experiential state is going to be a difficult task, and it is acknowledged that the information provided by the [survey] scales present a partial picture of what the experience of being in flow is like" (p. 154). The combination of a qualitative case study with a quantitative Experience Sampling Method measurement allowed each strand of data to complement and enhance the other strand (Bryman, 2006; Creswell & Plano Clark, 2011; Greene, Caracelli, & Graham, 1989).

This study used a convergent parallel mixed methods design (Creswell & Plano Clark, 2011). In this design, quantitative and qualitative data were collected at the same time on the same phenomenon and both types of data were given equal status. The data were analyzed separately using strategies common to each method and the results of each strand were interpreted. Once this was completed, the results of both strands converged and were integrated so that a comprehensive picture of student flow experiences in middle level instrumental music could emerge.

Significance of the Study

Flow theory (Csikszentmihalyi, 1990) is a framework used to explain one's experience in an activity. Applied to instrumental music classrooms, flow theory can measure the quality of a student's experience in rehearsal and performance. If a student is challenged, has clear goals, and receives feedback about her performance, flow is likely to occur. She becomes intrinsically motivated to seek out musical experiences

again and will grow as a learner in the process (Csikszentmihalyi & Larson, 1984).

Research shows that flow is more likely to occur when students are active participants in their learning by working "hands-on" and in groups instead of independently studying or sitting through a lecture (Shernoff & Csikszentmihalyi, 2009). Instrumental music classrooms are "hands-on" as students practice and perform on their instruments under the guidance of their teacher.

Young adolescents transition from elementary to middle school during a time of rapid developmental, social, and psychological changes (Mertens et al., 2007). Eccles et al. (1993) argued for the importance of a developmentally appropriate environment to encourage student motivation and achievement in middle school. Although Eccles et al. did not specifically mention flow theory, an alignment between the environment of the classroom and student performance is expected to create flow-like experiences. If the outcome of a flow experience is intrinsically motivated students who enjoy learning, it makes sense for us to understand how this occurs, so we can recreate it in our large ensemble classrooms.

This study aims to contribute to research on flow in music education settings in two ways as it will provide data regarding student flow experiences in an instrumental music class (including contextual factors that may help or hinder this experience). First, because of the use of a mixed methods design described earlier, this study will strenghten our understanding of flow in the field of music education. Second, understanding what impacts flow in a large ensemble setting will be beneficial for music teachers at the

secondary level as they plan for instruction and interact with students to create optimal learning environments that foster success.

Definition of Terms

Several recurring terms that have specific meanings will be used in this document. To ensure clarity and consistency, definitions for these terms are provided for the reader.

Adult Musicians: Musicians 18 years or older who play in an ensemble that is not part of a formalized education setting. Adult musicians in this context could be professional or amateur musicians.

College Musicians: Musicians who play in an ensemble that is part of a formalized education setting. College musicians play in an ensemble for college credit and could be graduate or undergraduate students.

Culture: The norms, rules, traditions, and expectations of a large ensemble and the patterns of interaction between members of the ensemble. This definition is adapted from the concept of culture used in organizational research, in which culture refers to the workings of an organization (Deal and Peterson, 2009; Hatch, 1997; Schein, 2004).

Flow: A theoretical construct that describes a subjective state of optimal, positive experience (Csikszentmihalyi, 1990). Flow is "the subjective buoyancy of experience when skillful and successful action seem effortless, even when [a] great deal of physical or mental energy is exerted" (Shernoff, 2013, p. 61).

Flow Channel: In flow theory, an optimal point where one's perceived challenges and perceived skills are high and are in balance.

Flow Dimensions: Nine characteristics said to be common to all flow experiences. The use of the word *dimensions* to describe components of flow theory is synonymous with the word *characteristics*. These dimensions are: a balance between challenge and skill, clear goals, unambiguous feedback, merging of action and awareness, deep concentration, loss of self-consciousness, sense of control, transformation of time, and intrinsic motivation or autotelic personality. The dimensions will be further defined in Chapter Two.

Middle School: Juvenon et al. (2004) define middle schools as "schools that serve as an intermediary phase between elementary school and high school, typically consisting of grades 6 through 8" (p. xv). Although middle schools can also consist of students in grades 5 through 8, 7 through 8, or 7 through 9, Juvenon et al.'s definition will be used in this study.

Young Adolescent: A student between the ages of 10 and 14, enrolled in a middle school.

Limitations

This study examined the flow experiences of seventh and eighth grade band students from one school located in the upper Midwest. There are four identified limitations to this study. First, this study is limited by sample size in both the quantitative and qualitative strands of data collection; this limits the ability to generalize results to a larger population. Although the quantitative data collection procedure involved gathering repeated responses in order to warrant a sufficient sample size for the statistical analysis employed in this study, these results cannot be generalized beyond the students at this school site. The qualitative case study relied on interviews of four students and one

teacher. This small number of participants provided an opportunity to understand the uniqueness of the case; any generalizability or transfer of results to other cases is left to the reader (Bresler & Stake, 1992). Second, part of the quantitative data relied on self-report data. Schmidt et al. (2007) cautioned that self-report data from adolescents can be "vulnerable to problems with memory, hasty completion, exaggeration, and falsification" (p. 556). Third, the quantitative responses may have a response bias, as only students who returned parental consent forms were included in the study. It is possible that the students who did not elect to participate in the study (because they did not return parent consent forms) might have had different responses to the surveys than the students who did participate. Fourth, there were only nine observations of the case spread out over six weeks during the fall of 2013. It is possible that additional observations over the course of a full academic year might have provided additional insights into flow experiences over an extended period of time.

Overview of the Study

Chapter Two is an in-depth review of the literature in order to provide a context for the current study. The chapter is organized into three main topics. First, flow theory and its application in general education will be discussed. Second, the connections between flow and music education will be discussed followed by a detailed examination of the research studies involving flow and music. Third, school and ensemble culture will be examined. Chapter Three will outline the rationale for and the description of the mixed methods design used for this study, including an overview of the types of data collected and the plans for analysis. The results of both the quantitative and qualitative

analyses will be presented in Chapter Four. Chapter Five will present the merging, or

integration, of the quantitative and qualitative data, examining the common factors that

may contribute to flow. Finally, Chapter Six will present a discussion of the data, the

implications for music education, and directions for future research.

Chapter Summary

This chapter provided an introduction to the present study on flow in the middle

level instrumental music classroom. Students in middle school have different needs than

students in high school or elementary school, as middle school students are navigating

numerous developmental changes during this time. Despite these changes, middle school

students still have the potential to experience flow in their academic experience,

including music class. By using a mixed methods approach, this study will contribute to

a better understanding of the student experience in middle school band through the lens

of flow theory.

CHAPTER TWO: LITERATURE REVIEW

The review of literature is divided into three main sections. The first section contains a discussion of flow theory, including its history and development, how it is measured through both qualitative and quantitative methods, and examples of the application of flow theory in schools. Flow theory and its relationships to student engagement research are also explored in this section. The second section discusses how flow theory connects to music education. The literature reviewed in this section focuses on music education philosophy and flow, flow in music ensemble settings, and flow in non-ensemble music settings. The third section examines the concept of school culture. This section includes a working definition of school culture, examines literature that explores middle school culture, and reviews literature that explores music ensemble culture.

The purpose of this study was to investigate selected factors that may impact a student's frequency of flow experiences in a large group rehearsal setting and how these flow experiences may relate to achievement and enjoyment in a middle school band. The intent was to use both quantitative and qualitative methods to uncover the relationships between flow theory, the ensemble culture, the type of classroom activities, and perceptions of skill among teachers and students. The quantitative component of the study focused on the relationship between the flow dimension of the balance between challenge and skill and various factors in the ensemble setting. The qualitative component of the study gathered data regarding the student experience in the ensemble as well as their perceptions of flow. Then, these two strands of data were integrated in order

to understand a more complete picture of the flow experience in a middle school band.

Flow Theory

The theoretical concept of flow emerged from research on intrinsic motivation by Mihalyi Csikszentmihalyi and his colleagues (Csikszentmihalyi, 1975). Starting in the late 1960s, Csikszentmihalyi observed artists and noticed they were intrinsically motivated to immerse themselves in the creation of their paintings (Csikszentmihalyi, 1988). Csikszentmihalyi was curious about the quality of the experience itself and why an activity, such as painting, could be intrinsically rewarding. In an interview, he stated:

> I was struck by how these artists would get completely lost in what they were doing for long periods of time. And yet, once they finished the canvas, they never looked at it again. Most of them weren't trying to sell their art. The finished painting was an excuse for them to paint. The process of painting was the reward that motivated them. So I started wondering, Does [sic] this happen in other aspects of life? (Scherer, 2002, p. 15)

This initial wonderment began a body of research exploring intrinsic motivation and enjoyment leading to the development of *flow*, an experiential state that "will produce a sense of exhilaration, energy, and fulfillment that is more enjoyable than what people feel in the normal course of life" (Csikszentmihalyi, 1988, p. 29). Csikszentmihalyi refers to flow experiences as "intrinsically motivated states of consciousness" (p. 29).

The theory of flow was conceptualized around the same time others were studying intrinsic motivation, most notably psychologist Abraham Maslow. Maslow (1962) theorized that people intrinsically sought out "transient or temporary episode[s] of self-

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actualization or health" (p. 11). These episodes, or *peak experiences*, occurred because

the activity itself was rewarding rather than being a way to receive an external reward.

Maslow described peak experiences as moments "of pure, positive happiness when all

doubts, all fears, all inhibitions, all tensions, all weaknesses, were left behind" (Maslow,

p. 9). Peak experiences could happen to many different people and in a variety of

contexts. As Maslow stated, "our kicks are the same; we just get them from different

paths" (1962, p. 12), meaning that people described similar affective responses to a

variety of peak experiences.   Csikszentmihalyi (1975) also described flow as being

analogous to work by De Charms (1977), who posited that people who were in an "origin

state" were more likely to be intrinsically motivated than people who felt like they were

"pawns." Similarly, Csikszentmihalyi (1975) acknowledged a connection between flow

and play, collective rituals, meditative states, or religious experiences.

Despite these similarities, Csikszentmihalyi (1975) argued that psychologists who

studied intrinsic motivation, like Maslow, generally equated enjoyable experiences with

hedonistic pleasure. Csikszentmihalyi also argued that behaviorists, who studied the

effect of external rewards or punishments on behavior, felt that people enjoyed an

experience because it provided an external reward. In addition, a psychoanalytic

approach to enjoyment, according to Csikszentmihalyi, explained it "as the disguised

manifestation of a conflict between basic instinctual needs and social constraints" (p. 8).

Csikszentmihalyi's theory of flow is a more complex model that studies enjoyment in the

here and now, "not as compensation for past desires, not as preparation for future needs,

but as an ongoing process which provides rewarding experiences in the present" (p. 9).

In other words, flow examines enjoyment for enjoyment's sake.

The decision to use the term *flow* to describe this model of intrinsically motivated behavior grew out of a study in which participants described their feelings and emotions when they engaged in activities that they enjoyed. Csikszentmihalyi (1975) and his research team gathered survey and interview data from 173 participants who engaged in activities that provided little, if any, extrinsic reward. These participants included rock climbers, chess players, composers, dancers, and basketball players. A rock climber used the word flow to describe his experience:

> The mystique of rock climbing is climbing; you get to the top of the rock glad it's over but really wish it would go on forever. The justification of climbing is climbing, like the justification of poetry is writing; you don't conquer anything except things in yourself….The act of writing justifies poetry. Climbing is the same: recognizing that you are a flow. The purpose of the flow is to keep flowing, not looking for a peak or utopia but staying in the flow. It is not moving up but a continuous flowing; you move up only to keep the flow going. There is no possible reason for climbing except the climbing itself. (Csikszentmihalyi, 1975, pp. 47-48)

Subsequent studies included data from surgeons (1975), college students (1975), and adolescents (e.g., Csikszentmihalyi & Larson, 1984) to further develop flow theory. Others have studied flow theory in Japanese motorcycle gangs (Sato, 1988), women in the workforce (Allison & Duncan, 1988), college students playing video games (Keller &

Bless, 2008) and elderly Korean immigrants residing in Chicago (Han, 1988). Other

studies include flow in educational contexts and music settings, which will be explored

later in this chapter.

Being in Flow

Returning to his original wonderment about whether or not other activities besides

painting were intrinsically motivating, Csikszentmihalyi shared the following synopsis of

his research in an interview:

> It turned out that people play music for the same reason. They play music to go
>
> on the journey, not to reach the destination. In sports, it is the same. I thought
>
> that the experience that made the activity so rewarding would be different in
>
> music or chess or rock climbing. Instead, what was so surprising was how
>
> similarly everyone described how they felt, even though what they were doing
>
> was so different. (Scherer, 2002, p. 15)

The last sentence in the preceding statement echoed Maslow's (1962) statement about

peak experiences: "our kicks are the same" (p. 12). People who engaged in enjoyable

and rewarding activities, regardless of "culture, stage of modernization, social class, age,

or gender" (Csikszentmihalyi, 1990, p. 48), experienced nine similar dimensions, or

characteristics, that help define flow.[2] These nine dimensions, described in the next

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[2] The use of the word *dimensions* to describe components of flow theory is synonymous
with the word *characteristics.* For consistency throughout the document, the word
dimensions will be used when describing the components of flow theory.

section, provide researchers with a conceptual framework for data collection and analysis.

Flow dimensions. Perhaps the most well known dimension of flow is the perceived balance between the challenge of the task at hand and the person's skill level (Csikszentmihalyi, 1988). The *balance between challenge and skill* allows for learning and growth so that, in order for the activity to remain enjoyable, the level of challenge must increase to match the growth of skills. If the challenge does not increase, the person will become bored with the activity. If the activity is too challenging, the person may experience anxiety and need to either reduce the level of challenge or increase her skill. If both challenge and skill are high, then the person becomes absorbed in the activity. Moneta and Csikszentmihalyi (1996) describe this as "an endless maximization process" (p. 278) in that there is no limit to a person experiencing flow.

Different illustrative models provide a visual representation of the balance between challenge and skill in contributing to flow (e.g., Csikszentmihalyi, 1990; Massimini & Carli, 1988). As described in the preceding paragraph, when engaging in an activity, one could feel boredom, anxiety, or flow, depending on the balance between challenge and skill. However, Massimini and Carli (1988) parsed out a greater array of possible emotional states from engagement in an activity, including apathy, worry, anxiety, arousal, flow, control, relaxation, and boredom. What both models share in common is the fact that there is a *flow channel*: an optimal point where the perceived challenges and perceived skills are high and are in balance. A simple representation of the flow channel is provided in Figure 1:
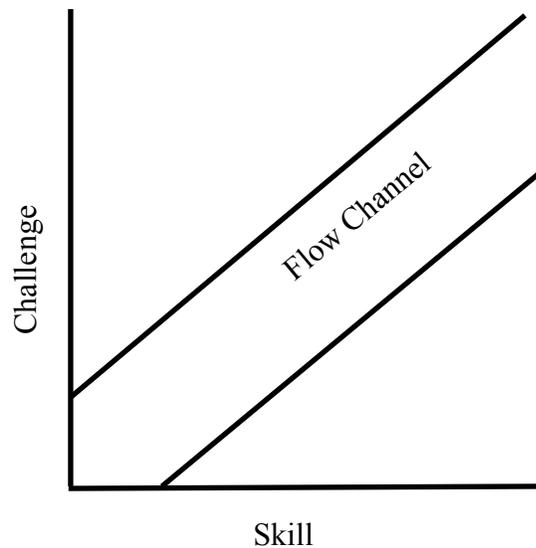
Figure 1: Balance Between Challenge and Skill (Adapted from Csikszentmihalyi, 1990)

  Clear goals and *unambiguous feedback* are two dimensions of flow that are often

associated. A person engaged in an activity needs to be aware of the goals, or purpose, of

that activity. If these goals are known, then feedback comes in the form of whether or

not the person met the goals of the activity. Not all activities have clear goals that are set

in advance, (e.g., creative activities such as creating art, composing, or writing). In this

case, "a person must develop a strong personal sense of what she intends to do"

(Csikszentmihalyi, 1990, p. 55). Clear goals and the resulting unambiguous feedback

that occurs when engaging in an activity, therefore, can be taught and learned.

  Next, a person engaged in a flow activity concentrates on the task at hand. The

dimension of *deep concentration* means that one's attention is so focused on the activity

that there is not any more room in one's mind for other thoughts. Csikszentmihalyi (1988) described how a violinist engages in deep concentration:

> violinists must invest all their psychic energy in feeling the strings and the bow with their fingers, following the notes on the score and the notes in the air, and at the same time feel the emotional content of the piece of music as a whole. (p. 34)

Jackson et al. (2010) described this sense of deep concentration as "being in the present moment" (p. 8), in that the performer is not distracted by any thoughts relating to other aspects of his or her life.

Although a person engaged in a flow activity is concentrating deeply, they do not need to invest energy in how their body is moving. This dimension is the *merging of action and awareness*, and, in 1975 Csikszentmihalyi referred to this as "perhaps the clearest sign of flow:" "a person in flow has no dualistic perspective: he is aware of his actions but not of the awareness itself" (p. 38). Returning to the violinists' example in the preceding paragraph, string players do not need to specifically think about what finger goes where on the fingerboard at every second of the performance. Rather, these actions become automatic and effortless, similar to a pianist who is aware that fingering patterns for major scales in flat keys are different than the fingering pattern for a C major scale. The awareness exists but the mind does not need to concentrate, or attend to, the fingerings for major scales; it is simply automatic.

Related to the dimension of merging of action and awareness is that of having a *loss of self-consciousness*. A person in flow is not preoccupied with what his body may look like during the activity because he feels "as one" with the activity. Musicians who

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play wind or brass instruments, for example, do not worry about what their face may look like when forming an embouchure as the correct embouchure helps to create the intended sound. Not being conscious of what the physical body looks like is a result of deep concentration during an activity: there is simply no room for outside thoughts to interfere as energy is completely invested in the activity.

Another dimension of flow is having a *sense of control,* or empowerment, over the situation. This dimension is often described in the context of people who are engaged in a highly physical activity, such as rock climbing (Csikszentmihalyi, 1990). In this case, rock climbers perceive a greater sense of control when climbing up a rock face than when crossing a busy traffic street. A rock climber has no control over the cars in traffic, but has control of his or her body when climbing to the summit.

People who report experiencing flow express that the sense of time changes. Time may seem to stop or slow down, as the person is aware of each and every movement and thought that occurs. Conversely, time may seem to speed up, as the person is so engaged they can't believe that time has passed. This *transformation of time* can mean different things to different people, even when engaged in the same activity.

Finally, a flow experience is such that the person becomes *intrinsically motivated* to seek out and engage in this experience again. Csikszentmihalyi (1988) describes this as one's consciousness being in harmony (p. 33). Intrinsically rewarding experiences are also known as autotelic experiences.

There is debate in the literature regarding the relative weight and importance of the balance between challenge and skill dimension when compared to the other eight

dimensions (Moneta, 2012). One approach considers the balance between challenges and skills, or the opportunity for the flow channel to occur, as a precursor to the other dimensions of flow (e.g., Csikszentmihalyi, 1990; M. Csikszentmihalyi & Csikszentmihalyi, 1998; Moneta & Csikszentmihalyi, 1996). In other words, the balance between challenge and skills must be set in order for the other eight dimensions to occur. A second approach considers all nine dimensions as correlated. Moneta (2012) explained:

> If the level of all components is highest, a person will be in a most intense, complex, and ordered flow state. If some components reach highest level whereas others reach only medium or low levels, the contributions to flow of the different components will trade off in producing a flow state that will be overall less intense, complex, and ordered than the ideal flow state. (p. 41)

Moneta proposed a hybrid model of the two approaches. In his description, the dimensions of balance between challenge and skill, clear goals, unambiguous feedback, and deep concentration would be antecedents to flow. Once flow occurs, the remaining dimensions of sense of control, merging of action and awareness, transformation of time, loss of self-consciousness, and intrinsic motivation would be the result. Regardless of the model chosen, Csikszentmihalyi (1975) acknowledged that "the various elements of the flow experience are linked together and dependent on each other" (p. 48).

Measuring Flow

Csikszentmihalyi originally used questionnaire and interview data to construct his theory of flow (Csikszentmihalyi, 1975). Shortly after, Csikszentmihalyi et al. (1977)

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piloted the Experience Sampling Method (ESM), which was developed in order to capture immediate descriptions of subjective feelings when participants were signaled to respond to questionnaires at random times (M. Csikszentmihalyi & Csikszentmihalyi, 1988). In the 1990s, a team of researchers developed a group of surveys to measure flow without interrupting one's experience, as ESM does (Jackson & Eklund, 2002). These self-report surveys included Likert-type scale items regarding each of the nine dimensions of flow. In order to familiarize the reader with these data collection methods, ESM and surveys used to measure flow will be summarized in this section.

Experience sampling method. After the initial stages of qualitative inquiry regarding intrinsic motivation and enjoyment, Csikszentmihalyi and his colleagues felt that interviews had become limiting (M. Csikszentmihalyi & Csikszentmihalyi, 1988). They wanted a method that did not rely on retrospective memories of experiences but rather something that captured a participant's feelings in the moment. The first Experience Sampling Method (ESM) study was published in 1977 (Csikszentmihalyi, et al., 1977) in an attempt to provide "systematic subjective data on the motivation, affect, and moods associated with persons' daily activities" (p. 282). The participants for this pilot study were 25 high school students who were signaled on an electronic paging device five to seven times per day between 8 a.m. and 11 p.m. for one week. When signaled, participants were to stop what they were doing and fill out a self-report form. The self-report forms were the same for each signal, resulting in 753 responses by the student participants. These data were then analyzed based on the research questions of the study.

Since the pilot study, the use of ESM has been expanded to collect data on all aspects of an individual's daily life (Hektner, Schmidt, & Csikszentmihalyi, 2007). The content of an ESM self-report form is based on the research questions of the study and can be in the form of a checklist, Likert-type response items or short, open-ended responses; the key is that the same form is used repeatedly over a predetermined amount of time. For example, Larson and Richards (1991) measured boredom in young adolescents using ESM. A random sample of 392 students in fifth through ninth grade from suburban Chicago schools completed ESM forms for one week. Each time students were signaled to complete an ESM form they indicated what they were doing and where they were, rated their level of boredom, and provided an explanation as to why they were bored, if applicable.

ESM is unique in that, by having participants immediately provide written responses when signaled, the nature of the experience is captured "as it is directly perceived from one moment to the next" (Hektner et al., p. 6). These potential fluctuations in one's cognitive or emotional states can be linked to demographic characteristics, location, activity, or even whom the person was with at the time (Schmidt et al., 2007). ESM allows researchers to study the cognitive and affective dimensions of an individual's experience – something that cannot be captured by observation alone and is often distorted when participants are asked to recall the experience at a later time. ESM has been called a "systematic phenomenology" in that it combines learning about the lived experience of participants (similar to phenomenology) with the ability to conduct statistical analysis similar to empirical investigation (Hektner et al., p. 6).

Flow scales. According to Jackson and Eklund (2002), the use of ESM for data collection in physical activity settings is disruptive to athletic performance. In other words, it is difficult to ask an athlete to stop throwing a football on the field in order to fill out an ESM self-report form, for example. Consequently, Jackson et al. (2010) developed, tested, and validated a battery of scales that came to be known as the Flow Scales; these surveys can be administered immediately after a participant completes a physical activity. The Flow Scales consist of the Flow State Scale (FSS-2), the Dispositional Flow Scale (DFS-2), and the Core Flow Scale. The FSS-2 and the DFS-2 asks participants to rate their agreement with 36 items that relate to the nine flow dimensions on a five-point Likert-type scale. The Core Flow Scale asks participants to rate their level of agreement with ten statements derived from athletes in previous qualitative research by Jackson (1996); the Core Flow Scale items are also Likert-type scale items.

When developing the Flow Scales, Jackson and Eklund (2002) disagreed with Csikszentmihalyi's prior research that focused on the balance between the challenge and skill dimension as an important precursor to having a flow experience. Rather, they felt all the flow dimensions were equally important to the construct of flow. Therefore, each of the flow dimensions in the FSS-2 and DFS-2 are scored and analyzed the same. The Flow Scales have been used in sports settings (e.g., Jackson, Thomas, Marsh, & Smethurst, 2001) and have recently been used in music settings (Clementson, 2013; Montanez, 2011; Sinnamon et al., 2012).

Flow in Secondary Education

Flow theory was not conceived as a learning theory but has enormous potential for its use in classroom settings. Csikszentmihalyi believed in the importance of challenge in schools; in an interview he stated, "challenge gives children vision and direction, focus and perseverance" (Scherer, 2002, p. 16). Shernoff (2013) used flow theory to conceptualize student engagement in schools and argued that learning and flow are synonymous. He coined the term *optimal learning environment* to describe a classroom (or other learning environment) where students are engaged "in learning and/or skill building as demonstrated by research" (p. 18). Optimal learning environments are ones in which the teacher creates opportunities for flow by having a challenging curriculum, high expectations for success, and a network of support. As a result, students are engaged. Shernoff defined student engagement as "the heightened simultaneous experience of concentration, interest, and enjoyment in the task at hand" (p. 12).

Difficulty arises when trying to discuss flow and student engagement because of the complex nature of both and the overlap between them in the literature. According to Fredricks, Blumenfeld, and Paris (2004), research on student engagement generally can be categorized in one of three ways: (a) behavioral engagement, which relates to a student's involvement in academic, social, or extracurricular activities; (b) emotional engagement, which relates to students' positive and negative feelings about school (e.g., enjoyment and interest); and (c) cognitive engagement, which relates to factors such as concentration, attentiveness, intensity, and problem-solving. Fredricks et al. categorize

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flow theory as a type of emotional engagement in schools, because it represents "high emotional involvement or investment" (p. 63). While their categorization aligns with Shernoff's (2013) conception of engagement (as defined in the preceding paragraph), Shernoff also stated that "the ideal state of engagement is usually active attentiveness and problem solving or the fashioning of products that promotes learning and the development of new skills, an *ideal that flow experiences encapsulate* [emphasis added]" (p. 12). This statement suggests that flow theory also relates to Fredricks et al.'s broad category of cognitive engagement research. In fact, the National Research Council (2004) states that flow is the "ultimate cognitive engagement" (p. 32).

Another component that adds to the complexity of the discussion surrounding student engagement is that of the school or, more specifically, classroom context. The context in which learning takes place impacts student engagement because it may influence how a student behaves, feels, or thinks (Fredricks et al., 2004; National Research Council, 2004). However, some researchers include context as a component of (rather than an antecedent to) defined student engagement. For example, Battistich, Solomon, Watson, and Schaps (1997) and Wang and Holcombe (2010) partly defined student engagement as the extent to which a student identifies with their school community. Regarding classroom context, the teacher may impact student engagement (Tomlinson, 1995; Yair, 2000). Tomlinson (1995) argued the teacher is the main role in student success, as it is the teacher who "must often define *challenge and growth* differently in response to students' varying interests and readiness levels" (p. 2). Yair

(2000) equated the adolescent mind as a "battlefield" (p. 248) that teachers must carefully navigate in order for learning to occur.

The existing research about student engagement does not use flow theory as a conceptual framework, however the existing research on flow in secondary classrooms relates to student engagement. Using Shernoff's (2013) conception of an optimal learning environment, which combines characteristics of emotional and cognitive engagement with contextual factors, can be useful when examining flow experiences in schools and classrooms. Because of this overlap between student engagement and flow, and because of the wide variations in research on student engagement, the remainder of this section will examine literature specifically related to flow in the secondary classroom setting.

Moneta and Csikszentmihalyi (1996) examined high school students' perceptions of the flow dimension of the balance between challenge and skill. They used hierarchical linear modeling (HLM) to analyze ESM data from 208 students who exhibited talent (as nominated by their teachers) in mathematics, science, music, athletics, or the arts. HLM allows for analyzing data both at the response (questionnaire) level and the student level in order to reduce aggregation bias. Specifically, Moneta and Csikszentmihalyi estimated the effects of the subjective perceptions of the balance of challenge and skill on four areas (concentration, wish to do the activity, feelings of involvement, and happiness) in four contexts (school, home, friends, and alone). Results indicated having a balance of challenge and skill "enhances the quality of experience" for all four areas in school settings, implying that an imbalance of challenge and skill negatively impacts the quality

of the experience (p. 302). The researchers admitted that the results generated from this study couldn't be generalized to all adolescents, as the participants in this study were nominated by teachers, and encouraged further research with different populations of adolescents.

Shernoff et al. (2003) analyzed the type of activity within class subjects to determine whether 526 high school students experienced flow. Shernoff et al. classified students' activities in school as "non-interactive," such as listening to a lecture, or "interactive," such as working in small groups. They found that students were more likely to experience flow in classes that were interactive, challenging, and had enjoyable tasks. Shernoff et al. also found that interactive activities only accounted for 14% of students' time in class. The rest of the time, students were engaged in individual work or were listening to lectures. Shernoff et al. recommended that teachers should engage students in challenging and relevant activities that allow students to feel confident and in control.

Nakamura (1988) studied the flow experience of high school students with a high ability in math, as indicated by their scores on an academic proficiency test. Student participants with high math ability were separated into two groups: high achieving and low achieving as rated by their teacher, even though their math ability scores were similar. The students filled out ESM self-report forms for one week. Nakamura found that when students in both groups experienced flow, they were "more satisfied with themselves than usual and experience[d] higher than usual activation, cognitive efficiency, and intrinsic motivation" (pp. 323-325). However, she found that the high

achieving students reported being in flow more often and reported feeling boredom less often than the low achieving students when engaged in school work.

Chandler (1987) compared the frequency of ESM responses for the entire population of 310 students at a secondary school (tenth- through twelfth-grade students) to ascertain whether students in physical education experienced flow more often than students in other subjects. Responses from students in physical education class were compared to responses from students in classes that had the potential to be "high flow" classes as well as from students in classes that had the potential to be "low flow" classes, as defined by Csikszentmihalyi and Larson (1984). Although Chandler did not specifically state the classes taught at the research site, "high flow" classes were arts courses, industrial arts, and music; "low flow" classes were considered by Chandler to be more "academic," such as math or English. From the ESM results, Chandler compared the means of flow (defined as when the rating of challenge was equal to the rating of skill), cognitive efficiency, motivation, activation and affect, and thoughts and actions. He found that 38% of responses from students in physical education classes indicated flow, 32% of responses from students in "high flow" classes indicated flow, and 28% of responses from students in "low flow" class indicated flow. Chandler concluded that students in physical education class "concentrated most extensively, were least self-conscious and experienced greater clarity in class" (pp. 61-62). However, no statistical tests were conducted to determine whether these results were statistically significant.

Gonzalez-Cutre, Sicilia, Moreno, and Fernandez-Balboa (2009) also studied flow in high school physical education classes, investigating how social goals and perceived

competence related to flow and the motivational climates of the classrooms. A sample of 779 students from four public schools in Spain completed a battery of Likert-type scale questionnaires regarding their physical education class: a measurement of motivational climate, a social goal scale, a measurement of perceived competence, and the Dispositional Flow Scale-2. The results were analyzed using structural equation modeling. Gonzalez-Cutre et al. found that a task-involving climate, defined as focusing on personal improvement rather than comparison and rivalry with others, positively predicted social goals and perceived competence, which in turn positively predicted flow. Although only the measure of motivational climate contained items regarding the teachers' behaviors in the classroom, Gonzalez-Cutre et al. suggested that teachers play a key role in creating positive classroom environments through cooperative learning activities and emphasizing effort and personal improvement over competition.

Boyer (1996) engaged in action research during a teaching internship at a middle school while completing his Master of Arts degree. The purpose of Boyer's study was to evaluate the conditions that were in place when he and his students achieved flow in a middle school science classroom, to reflect on his teaching experience, and to develop an "optimal pedagogy" in which to encourage flow experiences to occur (p. 3). In addition to keeping a journal of his experience, Boyer elicited written, open-ended responses from his students and conducted interviews with four students. Through the lens of flow theory, Boyer analyzed the data by looking for examples that matched the nine characteristics of flow. He concluded:

The flow states of my students and myself were intimately linked. I never

enjoyed the day if the majority of my students did not and vice versa. If either the

students or I felt a loss of control or a lack of mastery, the day was usually lost for

all of us. We all succeeded when the activities engaged both me and the students

and allowed for all of us to have a sense of control over the proceedings. (pp. 235-

236)

Boyer did not provide suggestions for further research but did provide recommendations

for future "teachers in training" as they begin their own teaching internships. His

recommendations included lesson planning, maintaining emotional control, and engaging

frequently in self-reflection.

Schmidt et al. (2007) conducted an exploratory study using ESM data that had

been collected as part of "a national longitudinal study investigating how students think

about their lives in relationship to the future" (p. 545). The purpose of this exploratory

study was to demonstrate the potential of using multilevel models to analyze factors that

may influence flow. Demographic data from 372 high school students were collected as

well as a total of 8298 ESM self-report forms; students filled out one ESM form each

time they were signaled with a pager between the hours of 7:30 a.m. and 10:30 p.m. for

one week. The data were analyzed using hierarchical linear modeling (HLM). To

determine what factors had a positive relationship to flow, a number of variables were

added to the multilevel model at both the response-level (e.g., time of day or type of

activity) and the person-level (e.g., gender or self-esteem) in various stages of analysis.

After examining the significant relationships, Schmidt et al. constructed a final,

comprehensive model that "appeared to have the greatest predictive power based on the previous analyses, while excluding significant overlap among predictors" (p. 552). Results indicated that (a) females reported experiencing flow more often than males, (b) higher levels of optimism and self-esteem were related to flow, and (c) the type of activity had a significant relationship to flow. Also, there was a positive relationship between the dimensions of flow related to the balance between challenge and skill, sense of importance, concentration, and autonomy with feelings of interest, enjoyment, control, and involvement. Schmidt et al. concluded that their findings validate the conceptualization of flow theory and suggested "that external dimensions of experience can also be important influences on flow experiences, including time and day, location, companionship, and, most notably, the particular type of activity in which one is engaged" (p. 556). They recommended the use of mixed methods research to investigate the intersection between person and environment in flow experiences.

The literature suggests that many factors may contribute to a student's flow experience in school. First, the type of class or activity within a class is related to flow (Chandler, 1987; Gonzalez-Cutre et al., 2009; Schmidt et al., 2007; Shernoff et al., 2003). Classes that allow students to interact with each other or with physical material, commonly art, music, or physical education classes, tend to facilitate students' having a flow experience. Second, the teacher may play a role in creating flow experiences, as suggested both by Gonzalez-Cutre et al. and Shernoff (2013). Third, there is a relationship between perceived competence, optimism, self-esteem and flow (Gonzalez-Cutre et al., Schmidt et al.). Last, Moneta and Csikszentmihalyi (1996), Nakamura

(1998), and Schmidt et al. concluded that if dimensions of flow were present, students experienced higher levels of concentration, involvement, satisfaction, cognitive efficiency, and enjoyment than students who did not experience flow.

Summary

This section of the review of literature outlined the development of flow theory from conceptualization to empirical use over the past 45 years. Csikszentmihalyi's development of flow theory is identified as nine different dimensions that are present during a flow experience: the balance between challenge and skill, a merging of action and awareness, clear goals, unambiguous feedback, deep concentration, a sense of control, a loss of self-consciousness, a sense of time changing, and an intrinsic motivation to seek out the experience again (Csikszentmihalyi, 1990). Empirical measurements, such as the Experience Sampling Method (ESM) and the Flow Scales (Jackson et al., 2010), were discussed. This section also covered existing literature regarding flow theory in educational settings. In the next section, flow theory and its relation to music education will be discussed.

<center>**Music and Flow**</center>

In his book, *Flow: The Psychology of Optimal Experience* (1990)*,* Csikszentmihalyi provided examples of the how the body and mind, working together, can induce flow experiences when engaged in a variety of activities. These activities include running, yoga, martial arts, eating, sex, or listening to or performing music. Although the distinction between Maslow's theory on peak experiences and Csikszentmihalyi's theory of flow experiences was made earlier in this chapter, Maslow's

(1971) statement that "the two easiest ways of getting peak experiences…are through music and through sex" (p. 175) is often quoted when discussing music and flow. In Maslow's view, "through music" means performing, listening to, or dancing to music.

The act of practicing or performing on a musical instrument is used to illustrate dimensions of flow theory, as in this example regarding the balance between challenge and skill:

> When learning a new skill, the challenge of undertaking even a basic task may exceed a student's beginning level of ability, and hence they may feel overwhelmed – even "Twinkle, Twinkle Little Star" may be too difficult for the novice pianist….In this case, sufficient practice may be needed until the song is mastered. Once the song is played with relative ease, learning a new song at a higher level of challenge, causing one's skill to increase yet again, can restart a cycle of fresh learning. Thus, the pianist may progress through increasingly difficult songs at ever higher levels of skill. Flow is experienced at the highest level of challenge and skill for that individual – as when a master pianist is playing a Mozart concerto. (Shernoff & Csikszentmihalyi, 2009, p. 132)

Similar to Bruner's (1960) concept of the spiral curriculum in education, musicians may revisit pieces that were once challenging but later become easier as learning occurs. Flow can be experienced by a young musician learning to play a new instrument as well as by an adult who has been playing an instrument for many years. Csikszentmihalyi and Schiefele (1992) found that high school students who were considered talented in music

and art tend to experience flow more often, as indicated by having a balance between challenge and skill, than students who were considered talented in math and science.

This section of the literature review will focus on two main areas regarding music and flow. The first area will explore flow in the context of music education philosophy. The second area will discuss the existing research that applies flow theory to music teaching and learning in education settings.

Music Education Philosophy and Flow

Flow theory (Csikszentmihalyi, 1990) appears in the works of three philosophers of music education: Bennett Reimer (1995), Keith Swanwick (1999/2012), and David Elliott (1995). This section will briefly summarize how each scholar aligns flow theory to his vision of music education. While Reimer's, Swanwick's, and Elliott's distinct contributions to music education merit detailed examination, such an examination is beyond the scope of this work.

Reimer (1995) posited that engaging with music through listening, composing, performing, improvising, or conducting creates opportunities for flow to occur in connection with a personal and intimate musical experience. He defined this as a *profound musical experience,* where one is "moved deeply in response to music" (p. 11). Reimer acknowledged that the flow dimension of creating balance between challenge and skill should be at the forefront of the music educator's lesson planning so that students can "reach for the edge at which technical capacities and musical richness merge with the experiencing self in moments of deepest meaning" (p. 18). In other words, students who

are in the flow channel when engaging with music have the potential to have a profound musical experience.

Reimer argued that profound musical experiences are the ultimate goal of music education, "encompassing yet transcending all other goals toward which a good music program aims" (p. 16). Music teachers - regardless of grade level or subject taught - should create a supportive atmosphere in which students feel safe and secure so that profound musical experiences can occur. These experiences may not happen everyday, but it is the hope that they happen with some frequency.

Unlike Reimer, Swanwick (1999/2012) did not distinguish between a personal, intimate musical experience and a flow experience but rather considers them to be one in the same. Swanwick writes:

> 'Flow' is really just one more attempt to describe and evaluate those experiences which seem to lift us out of the ruts of life and which have been variously called transcendental, spiritual, uplifting, 'epiphanies,' yes, and '*aesthetic.*' So let us not quibble over what we want to call such experiences, but acknowledge their existence and try to understand how they occur and what their value might be. (p. 15)

In addition to the synonyms for flow that Swanwick listed, he also considers the following terms to be interchangeable with flow: aesthetic experience, peak experience, significant experience, and valued musical experience.

Swanwick claimed that a flow experience is a result of one's musical engagement moving through three metaphorical processes. First, individual tones that are grouped

together become tunes, or "sounds as expressive shapes;" next, these tunes "assume new relationships as if they had 'a life of their own;'" finally, the tonal relationships inform "the life of feeling" (p. 11). It is during this third shift that flow, or what Swanwick defined as a *valued musical experience,* occurs. Swanwick argued that musical engagement must reach this third shift in order for a person to describe their experience as being in flow or valued. He also argued that this shift occurs often enough that people are aware of it and purposely engage with music in order to have a valued musical experience. This purposive engagement aligns with Csikszentmihalyi's autotelic dimension of flow theory, where people are intrinsically motivated to repeat an activity for the sake of the activity rather than some external reward. Similar to Reimer, Swanwick felt that the goal of music education is for students to have "access to all three metaphorical processes," which includes having a valued musical experience. Teachers may not know if students reach the third metaphorical shift, but should strive and hope for this to occur.

Elliott (1995) posited that music making (defined as performing, improvising, composing, arranging, and conducting) and music listening are the two main activities that develop one's musicianship. In his view, the music that a student makes or listens to must "spiral upward in complexity" to create "increasingly complex musical challenges" to match the student's "increasing levels of musicianship" (p. 121). This match between musical challenge and musicianship allows all students, from beginner to expert, to achieve self-growth, self-knowledge, enjoyment, and flow while engaged in music

making or listening.[3] These outcomes, Elliott stated, are the goals of music education. Shernoff and Csikszentmihalyi's statement regarding the learning of "Twinkle, Twinkle Little Star" presented earlier is an illustration of Elliott's conception of music learning.

Csikszentmihalyi (1990) referenced listening or performing music as one way for the body and mind to achieve flow. Flow theory has found its way into the literature on music education philosophy by Elliott (1995), Reimer (1995), and Swanwick (1999/2012), as summarized here. While Elliott's argument about the goals of music education most closely align with Csikszentmihalyi's basic premise of flow theory, Reimer and Swanwick both suggested that flow does not simply occur by engaging in music. Swanwick equated a flow experience to having a valued musical experience; the music means something to the student who engages with it. Reimer stated that a flow experience coupled with a musical experience creates a profound musical experience. Regardless of these differences in thought regarding musical experiences, flow theory and music appear to be closely related.

Flow in Music Education Settings

In the field of music education, there is a small but growing body of research that applies flow theory to teaching or student learning. This existing research tends to be one of two types. The first type of research examines the prevelance of flow in a musical

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[3] Elliott's conception of the match between musical challenge and musicianship is an adaptation of Csikszentmihalyi's (1990) flow diagram. Elliott's *musical challenge* equates to Csikszentmihalyi's *challenge* on the Y-axis and *musicianship* equates to *skill* on the X-axis. Elliott states that a musician who experiences *self-growth* when musical challenge and musicianship are in alignment equates to a person experiencing *flow*, or being in the *flow channel*, when their challenge and skills are in alignment.

setting through observation (e.g., Custodero, 1997, 2005), interview (e.g., Freer, 2009), or

survey (e.g., Sinnamon et al., 2012). The second type of research specifically pairs flow

theory with another component, such as music composition in an undergraduate music

class (Byrne et al., 2003), music student well-being (Smolej Fritz & Avsec, 2007), or

teacher instructional language in middle school choir (Freer, 2008). For purposes of

organization, the literature regarding flow in music education settings will be grouped

into two parts. The first part will examine flow theory applied to bands, choirs, and

orchestras from secondary to collegiate levels. The second part will examine flow theory

applied to non-ensemble music settings.

Flow in music ensembles. Flow theory has been used as a lens to examine

student enjoyment and well-being in bands, choirs, and orchestras. Researchers have

compared differences in age or ability level on flow experiences in these ensembles, how

the teacher or the type of activity may play a role, and if flow experiences change over

time. Flow experiences in the ensemble have been examined both with individual

students and with the group as a whole. This section examines the research that applies

to flow in music ensemble settings.

Cassie (2011) examined the flow experience of students in a beginning string

orchestra class by studying student engagement and enjoyment. Cassie observed and

analyzed 16 video recordings of her string orchestra that was comprised of 11 sixth grade

students. In the rehearsals, students played scales, practiced in small groups, and

performed songs while arranged in four different seating configurations. Cassie analyzed

observed musical behaviors using the Flow Indicators of Musical Experiences (R-FIMA)

coding form. The R-FIMA was developed by Custodero (1997) as a way to measure flow in students who were too young to participate in written self-reports by recording their affective and behavioral responses when engaged in musical activities. In this study, Cassie used one coding form per student for each predetermined event, resulting in 508 R-FIMA forms. A factor analysis placed the observed behaviors into five dimensions: personal skill, negotiation, social, agency, and affect. Results from a multiple regression analysis showed that personal skill and agency were statistically significant predictors of flow. Cassie also noted that students seemed to have more flow experiences when students were seated in "non-traditional" seating arrangements (i.e., not seated in rows). Cassie suggested expanding this research protocol to larger string classes of both beginner and more advanced musicians.

Clementson (2013) examined the extent to which middle school students experience flow in their instrumental music class and whether a student's skill level has an effect on his or her flow experience. Participants from two middle schools completed the Dispositional Flow Scale-2 (DFS-2) and rated their individual skill level. Teachers also provided a rating of each student's performance skill. Mean scores indicated that students experienced all nine dimensions of flow during band rehearsal. Results of the multivariate analyses of variance (MANOVAs) indicated that student self-perception of musical skill did not have a significant effect on flow scores, suggesting that, regardless of their self-assessment, students can find band to be enjoyable and challenging. Teacher rating of skill level, however, was significant for three dimensions of flow (merging of action and awareness, unambiguous feedback, and autotelic experience) for students

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ranked as having high skill. Results from an independent samples t-test compared the mean total flow score for students whose self-perception matched their teacher's rating to students whose self-perception did not match their teacher's rating. Students' total flow scores were significantly different when their self-perception aligned with the teacher's rating of skill, regardless of skill level. Clementson suggested that, as teachers plan for teaching and learning, they should be aware of their students' self-perceptions of competence; this awareness may help promote flow experiences in the classroom.

O'Neill (1999) used the Experience Sampling Method (ESM) to compare self-reported flow in high school music students' in-school and out-of-school activities over one week. She examined three groups of students: high achievers who attended a music-focused high school,[4] moderate achievers from the same school, and musicians who attended a non-music high school. Participants were rated as high or moderate achievers by their teacher. Students' reported activities from the ESM were coded and grouped into three domains: productive (school work, homework, practicing their instrument), leisure (e.g., watching TV, sports, listening to music), and maintenance (e.g., eating, personal care). Post-hoc tests following a one-way analysis of variance (ANOVA) showed that high achievers from the music school and students from the non-music school reported significantly more flow experiences when engaged in musical activities (productive or leisure) than moderate achievers from the music school. Follow-up

[4] This study was conducted in the North of England, where state schools have the option to specialize in a subject area (i.e., music). Students at "specialist" schools still take courses in a variety of subject areas (e.g., math and science).

interviews revealed that the moderate achievers perceived that there is more competition at their music school while the high achievers from the same school expressed a supportive and encouraging environment from their peers. This has implications for teachers who instruct a wide range of students in that they may need to tailor their classroom environments differently in order to effectively promote flow for all students.

Sinnamon et al. (2012) compared the flow experiences of two groups of musicians using the DFS-2: performance majors at a local university (defined by the researchers as *elite*) and high school students participating in band or orchestra (defined as *amateur*). Because the DFS-2 was originally developed to measure the prevalence of flow for athletes, Sinnamon et al. conducted a factor analysis to determine the validity and reliability of the measurement with their sample of musicians. They concluded that the DFS-2 is an appropriate measure for musicians and that both groups of student musicians reported experiencing flow, though the elite musicians reported more flow experiences than the amateur musicians. The researchers cautioned about the frequency differences that arise from calculating the results from the DFS-2 as a total, or "global flow," score versus calculating each dimension of flow separately (p. 20). For example, in their sample, 90% of students reported experiencing flow frequently when using a total score but only 56% reported experiencing the dimension of merging of action and awareness. In addition, the researchers encouraged music educators to apply existing empirical knowledge of flow to their classrooms.

Montanez (2011) conducted a mixed methods study of flow in a high school instrumental music program. She administered the Flow State Scale-2 (FSS-2), a Likert-

type response survey similar to the DFS-2, to 481 high school instrumental music students in California. Based on the results of the FSS-2, Montanez identified the students who frequently were in flow. She interviewed these 24 students and found that physical and mental preparation, as well as the environment, could affect the flow experience in a large performance ensemble.

Jaros (2008) investigated whether high school students experienced flow in an honors choral ensemble and whether time, previous singing experience, or gender had an effect on flow. Using a researcher-designed Choral Singing Experience Sampling Form, Jaros measured the frequency of the nine dimensions of flow on a five point Likert-type scale (0 = *never*; 4 = *always*). He found that singers consistently experienced flow during the week-long rehearsal process, yet total flow mean scores increased until the third day of rehearsals before decreasing throughout the rest of the week. He also found that years of singing experience only had a significant effect on the sense of control dimension of flow; gender did not have any significant effect on any of the flow dimensions. Although qualitative data from field notes were not analyzed, Jaros asserted that repertoire selection and the conductor's personality may have an effect on the honors choral experience, and encouraged future research in this area.

Through interview data, Freer (2009) used narrative to highlight areas of congruence between reported positive music experiences and flow theory among six male high school students. Although Freer's work focused on males and their experience in choral ensembles, his participants provided examples of their experiences in choir, band, sports, and church music activities that Freer connected to the nine dimensions of flow, as

defined by Csikszentmihalyi (1990). Freer concluded that "successful completion of challenges is positively correlated with enjoyment of an activity" (p. 155) and that choir teacher interest plays a role in the student experience. He recommended that choral teachers should adapt their teaching and classroom environments to the needs of adolescent boys in order to optimize opportunities for flow to occur.

In another study, Freer (2008) used flow theory to measure student experience in relation to teacher instructional language with middle school choral students. Using a mixed methods approach, Freer coded teachers' instructional language as scaffolding (i.e., presenting a question or prompt for students to answer) or non-scaffolding, analyzed video recorded rehearsals for sequential teaching (i.e., the process of the teacher presenting a musical task, the students responding to the task, and the teacher's subsequent feedback on the task), and measured students' reported levels of challenge and skill with an exit survey after rehearsal. Although Freer only focused on a single characteristic of flow, citing one's perception of challenge and skill to be the "strongest markers" of flow (p. 108), he stated that student flow significantly correlated with the mean percentage of scaffolding language. This suggests that the teacher plays a key role in the students' music experience in the choir classroom.

Diaz and Silveira (2012) examined student-reported flow experiences at a summer instrumental music camp held at a large southeastern university. A researcher-designed survey was given to five summer camp instructors who taught music theory, conducting, group lessons, and orchestra. The instructors distributed the surveys to camp participants in their classes; 87 out of 150 surveys were returned. Students self-selected their top

three choices of flow activities from a list and had the option of adding their own to the list in an "other" category. Then, students indicated their level of attention and enjoyment for the three activities using a 10-point Likert-type scale (1 = *very low*; 10 = *very high*). Large ensemble rehearsals were the most "flow inducing" activities at the summer music camp (63%), followed by non-specified elective classes (45%), and music theory class (29%). These three activities had moderate to strong Pearson product-moment correlation coefficients between level of attention and enjoyment. Diaz and Silveira noted that the most common flow inducing experiences were group academic activities and suggested that these activities were flow inducing because they have a "sustained cycle of feedback concerning skills and challenges" as an experienced teacher leads the students through "well-executed teaching cycles" (pp. 316-317).

Smolej Fritz and Avsec (2007) investigated the relationship between subjective well-being and flow with junior conservatory music students in Slovenia. The researchers administered the Dispositional Flow Scale (DFS), the Satisfaction with Life Scale (SWLS), and the Positive Affect Negative Affect Schedule (PANAS) to the student participants. Participants were also asked to describe a musical activity that "provoked the strongest, the most pleasant, or the most special feelings" (p. 10). Frequency counts of musical activities showed that participants reported the most flow during a performance. Because the DFS measures each of the nine characteristics of flow, the researchers were able to correlate each characteristic with the PANAS and the SWLS. Results indicated three dimensions that were significantly correlated across both the PANAS and the SWLS: challenge-skill balance, merging of action and awareness, and

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autotelic experience. Smolej Fritz and Avsec concluded that, based on these three dimensions, flow experience is related to a musician's well-being.

Flow as experienced by adult musicians in high quality performance ensembles was the topic of qualitative studies by Kraus (2003), Sutton (2004), and Marotto et al. (2007). Kraus examined the flow experiences of undergraduate and graduate students in their college wind ensemble. He recorded 13 rehearsals, took field notes, and interviewed 10 students and the conductor of the ensemble. Seven students - considered to be primary informants - also provided Experiencing Sampling Method (ESM) data for one of the observed rehearsals. These data consisted of four pairs of words; the primary informants chose one word from each pair that best described how they felt when they were signaled by a pager. These data were then used for stimulated recall during the primary informants' interviews. Kraus found that students were more apt to feel frustrated or bored when they were not directly involved or interested in what was being rehearsed. Students described being in flow when they were actively involved in rehearsal through performing or directed listening. Kraus also noticed that the graduate students were more likely to be intrinsically motivated, or autotelic, because of prior experience playing the repertoire in another ensemble. He also found that there was a group dimension to rehearsal: "comments such as 'find the person,' 'listen to everyone else,' and 'play with' others reveal that the musical interaction between players is one aspect of the challenge of playing in an advanced ensemble" (p. 103). The conductor played a role in the students' flow experience, as he controlled the repertoire selection and pacing of the rehearsals. Kraus suggested extending the period of data collection

from the beginning of a rehearsal sequence to the concert, conducting post-concert interviews, and gathering more ESM data from members of the ensemble.

Using the terms *flow, peak experience,* and *transcendent experience* interchangeably, Sutton (2004) conducted an exploratory study on the nature of the group peak experience in three small chamber ensembles of adult musicians. He interviewed the members of a saxophone quartet, a string trio, and a string quartet. Through analysis of the semi-structured interview data, he identified factors that facilitated or obstructed peak experiences of the entire group, as opposed to studying an individual's peak experience within the group. These included trust and friendship, the role of the audience, ownership of the music rehearsed/performed, individual and group preparation, and not having a diva, or overpowering ego, in the group. Sutton concluded:

> There is a striking similarity between the description of feelings during moments of transcendence given by musicians in this study and those of individuals describing Csikszentmihalyi's (1990) 'flow' state. Considering the consistency investigators find among studies of flow, perhaps it would have only been surprising if this were not the case. (p. 102)

Sutton recommends expanding this exploratory research to larger music ensembles to see if the amount of musicians involved in performance changes the collective perception of a peak experience.

Although they didn't reference Sutton's research on group music performance, Marotto et al. (2007) explored collective peak performance in a conservatory orchestra. Similar to Sutton, Marotto et al. argued that a peak performance is synonymous with a

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flow experience. Of the three researchers involved with the study, only Marotto spent time with the orchestra. He was a postgraduate conducting student and spent one year collecting ethnographic data by journaling about his experience with the orchestra, conducting semi-structured interviews, and engaging with the student musicians in informal conversation. Marotto et al. analyzed journal and interview transcript data by focusing on three group variables derived from literature on organizations: the leader (conductor), the task (preparing for a concert), and the group members (the student musicians).

Marotto et al. concluded that the conductor, or leader, impacted the performance of the student musicians. Contextual factors contributed to the preparation for a concert, or task, such as urgency and having an audience at the concert. In addition, the researchers identified an explicit hierarchy among the student members of the orchestra within their sections. Marotto et al. proposed a model of collective virtuosity in organizations in which the leader, task, and group serve as catalysts towards peak performances. Group members have a collective peak performance because of the social element of being together. Once a peak performance is achieved, this "collective virtuosity is either sustained or breaks down due to fragility" (p. 409). Any of the three factors (leader, task, or group members) have the potential to be a catalyst for collective virtuosity.

The literature suggests that numerous factors may impact one's potential to have a flow experience in a music ensemble. Personal characteristics such as age, preparation, and skill may be factors that effect individual flow. Both Kraus (2003) and Sinnamon et

al. (2012) found that older musicians reported being in flow more often than younger musicians. Jaros (2008) found that years of experience had an effect on the sense of control dimension of flow. Montanez (2011) found that students who reported to be in flow more often felt that their physical and mental preparation played a role in their flow experience. Cassie (2011) found that personal skill was a significant predictor of flow, however Clementson (2013) did not. Second, as indicated by Diaz and Silveira (2012), Freer (2008), Kraus (2003), and Marotto et al. (2007), the teacher (or conductor) can influence the quality of the students' (or musicians') experience. The teacher/conductor structures both the content and pacing of rehearsals as well as selects the repertoire that the musicians rehearse. Third, researchers who examined a variety of music-related activities (Diaz & Silveira, 2012; O'Neill, 1999; Smolej Fritz & Avsec, 2007) found that participants rated performance in ensembles as one of the highest flow-inducing activities.

Flow in non-ensemble music settings. There is limited empirical research about flow theory applied to music settings beyond large ensemble settings. One area of research involves the observation of young children's actions and behaviors in music classes; this research will be reviewed in this section. Also, two other studies are worth mentioning regarding flow in music classrooms. The first, by Byrne et al. (2003), examines flow and the quality of group compositions. The second, by Bakker (2005), examines flow in music teachers and its relationship to both job support and student flow. These studies will also be reviewed in this section.

Researchers who use the Experience Sampling Method (ESM) or surveys, such as

the Dispositional Flow Scale (Jackson et al., 2010), assume that their participants are able

to read and write. However, a challenge arises when using these tools to measure flow in

very young children who are unable to read or write. In order to investigate the

relationships between flow and music learning in an early childhood classroom,

Custodero (1997) developed a measurement tool to record young children's musical and

flow behaviors. Based on an existing ESM form, Custodero developed and tested the

Flow Indicators of Musical Activities (FIMA) by analyzing videos of 11 children, ages

four and five, enrolled in an early childhood music class. The FIMA allowed for

recording observed subjective states (e.g., happy/sad) and observed behaviors (e.g.,

perceived challenge, awareness of others, intensity, and performance accuracy) while

children were participating in musical activities; there were a total of 17 flow variables on

the FIMA. One FIMA form was completed for each child that was observable on video

during each musical activity, resulting in 472 FIMA forms. In order to test the reliability

of the FIMA, two coders filled out FIMA forms and analyzed the data. Results of a

factor analysis reduced the 17 variables into seven factors that were significantly related

to flow: affect, behavior, challenge, comfort, imitation, potency, and self-concept.

Results of a multiple regression analysis indicated that four of these variables predicted

flow: behavior, challenge, potency, and self-concept. Custodero concluded that the

FIMA was a reliable and valid measurement of flow in young children.

Next, Custodero compared the observed behaviors recorded on the FIMA forms

with the type of musical activity, its length, the level of familiarity the children had with

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the activity, the social context, and the physical location. Results of analyses of variance (ANOVAs) indicated that flow occurred when the teacher and parents expressed interest in the activity but not if they intervened with the child's participation in the activity. Results also indicated that flow occurred if there were clear goals for the activity and if children received feedback from the teacher or parents. Custodero found that children modified the level of challenge by anticipating and expanding the activity if given time to do so. She concluded that young children need time "to discover, self-correct, expand and extend their musical experiences" and recommended planning for "adequate time for personal manipulation of the material" by the children during class time (pp. 174-175).

Custodero has since extended her research to include younger and older children than the four and five year olds in her 1997 study. A 2005 study included teaching and observing four groups of children: eight infants, ten toddlers, six kindergarten children enrolled in a violin class, and five children enrolled in an afterschool Dalcroze program. Custodero, along with three research assistants, recorded descriptive data for musical events, listing the flow indicators that were "distinctly observable" along with a description of the specific actions of the child being observed (2005, p. 192). Cross-case analysis of the descriptive data suggested that flow indicators (listed as: self-assignment, self-correction, gesture, anticipation, expansion, extension, adult awareness, and peer awareness) each follow their own "developmental trajectory" (p. 202). Flow indicators become more observable, are fully observable and maintained, or become less observable as children grow. For example, Custodero suggested that the flow indicator of "peer awareness" becomes more observable with each group of children. In other words, as

children grow, they become more and more aware of what their peers are doing during the musical activity. Custodero encouraged further research to confirm this proposed developmental trajectory as well as to examine the importance of each of the flow indicators over time in young childrens' musical activity.

Chen-Hafteck and Schraer-Joiner (2011) used the flow indicators (Custodero, 1997, 2005) to compare flow indicator behaviors of typical-hearing and hard-of-hearing or deaf children in music class. Chen-Hafteck and Schraer-Joiner examined music participation in two classes of music students, ages three and four. The first class had five children who were labeled hard-of-hearing or deaf; the second class had four children who were labeled typical-hearing. Schraer-Joiner taught weekly music classes to both groups; classes were videotaped and the researchers analyzed four videotaped classes from each group. Similar to Custodero's method of coding (1997), the researchers rated the observed flow indicators for each child for each musical event that occurred. In addition, the researchers wrote descriptive comments about the actions of the child during each musical event. The researchers found that all of the children demonstrated flow indicator behaviors, therefore they concluded that all the children were engaged during musical activities. Chen-Hafteck and Schraer-Joiner argued, "all children, including hard-of-hearing/deaf children, are innately musical," (p. 100) and encouraged expanding this research to include more children with various degrees of hearing loss.

Byrne et al. (2003) investigated the relationship between three flow dimensions and undergraduate student compositions. First-year college students in a class designed

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"to assist musicians in developing and regulating their own thinking and learning skills"

(p. 281) composed, performed, and recorded a musical piece by working in small groups.

As they worked, students filled out three self-report forms related to the flow dimensions

of clear goals, unambiguous feedback, and the balance between challenge and skill. The

researchers found a significant correlation between the quality of undergraduate students'

group compositions (as rated by postgraduate students) and mean scores on the self-

report forms. In other words, compositions by students in groups with higher mean flow

scores were rated as more creative than compositions by students in groups with lower

mean flow scores. The researchers concluded that classroom activities designed to

promote flow characterisitcs will more likely result in higher quality work and

encouraged music educators to consider this when planning classroom activities.

Bakker's (2005) study of music teachers' reported flow experiences is a departure

from the existing literature on flow in music classrooms and ensembles, which focuses

primarily on the students' (or musicians') experience. Bakker examined the relationships

between job resources, the balance between challenge and skill, flow in music teachers

while at work, and flow in music students. Job resources were defined as feelings of

autonomy, social support, supervisory coaching, and performance feedback. Flow at

work was defined as "a short-term peak experience that is characterized by absorption,

work enjoyment, and intrinsic work motivation" (p. 37). 178 music teachers who taught

private or group lessons in music schools in the Netherlands responded to survey items

regarding job resources, balance between challenge and skill, and flow at work. Bakker

instructed the music teachers to randomly distribute a student version of the survey to

four of their own students; 605 students completed surveys. Results of a structural

equation modeling analysis showed that, indeed, job resources had a positive relationship

with the balance between challenge and skills, which in turn had a positive relationship

with flow at work. Also, the flow experience of teachers had a positive relationship with

student flow experiences. Bakker noted a number of limitations to this study, including

the lack of a random sample and the fact that the explained variances between the

components of the model were low. He suggested more research in the area of flow at

work to determine how absorption, work enjoyment, and intrinsic work motivation align

with Csikszentmihalyi's (1990) nine dimensions of flow.

The literature reviewed in this section suggests that very young children

experience flow when clear goals are present and when adults provide feedback and

express interest; young children will also modify their own level of challenge by

extending their invovlement with a musical activity. Custodero (2005) suggested that

flow behaviors in children are present from infancy but these behaviors may become

more observable, less observable, or remain the same over time. College students also

experience flow, even when not performing in ensembles. Byrne et al.'s (2003) research

regarding music composition suggests that students who report being in flow may

produce higher quality work than students not in flow. Finally, Bakker's (2005) research

on music teachers relates to previously reviewed research about the teacher's influence or

role in the classroom. Boyer (1996), Gonzalez-Cutre et al. (2009), and Freer (2008)

suggested that the teacher may have an effect on the environment of the science, physical

education, or choir classroom, respectively. Also, Diaz and Silveira (2012), Kraus

(2003), and Marotto et al. (2007), suggested that the ensemble conductor may have an effect on an individual musician's flow experience during both rehearsals and performances. Although these studies did not measure teacher or conductor flow, Bakker's research provides empirical evidence that supports a relationship between teacher flow and student flow.

Summary

Flow theory (Csikszentmihalyi, 1990) has been used as a conceptual framework for studying the experience of students and musicians in bands, choirs, orchestras, individual or small ensemble practice and performance settings, early classroom music, and for students engaged in composing. The flow dimension of balance between challenge and skill is often referenced in relation to a musician learning to play an instrument (e.g., Elliott, 1995; Hektner et al., 2007; Shernoff & Csikszentmihalyi, 2009): a beginning musician starts with rudimentary skills and is able to play simple melodies; as the musician's skills become more advanced, so does the music available to him to play and perform. Although Cassie (2011), Clementson (2013), Freer (2008, 2009), Kraus (2003), Marotto et al. (2007), Montanez (2011), and Sinnamon et al. (2012) contributed to the body of research on flow experience in an classroom or rehearsal setting, there is still a need to understand the flow experience of young adolescents in middle school band, the factors that may contribute to young adolescents' flow experiences in middle school band, and how the context of the middle school band may contribute to these flow experiences. The current study is designed to contribute to the

understanding of flow experience in rehearsal settings, more specifically to those rehearsal settings that occur in a middle school.

School Culture

Organization theory studies the experience in and of organizations (Hatch, 1997).[5] Hatch (1997) stated that organizations can be conceptualized as "technologies, social structures, cultures, and physical structures that overlay and interpenetrate one another within the context of an environment" (p. 15). Therefore, according to Hatch, organizational culture is one component of organization theory. She stated that, for some,

> [the word] culture retains its association with the intellectual and artistic, [but] most organization theorists have emphasized the meaning of culture as a particular way of life among a people or community. Thus, organizational culture usually refers to the way of life in an organization. (p. 204)

Schools, as organizations, have their own "way of life," or culture (Eisner, 2002, p. 157). School culture consists of the "shared sets of norms, values and beliefs of members of an organization *and* the form of the patterns of relationships among these members" (Hargreaves et al., 1996, p. 23; see also Deal & Peterson, 2009). Deal and Peterson (2009) stressed that the shared norms and patterns of relationships are not written down or made official but rather are tacit assumptions. These tacit assumptions shape the

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[5] Although organization theory has a long history rooted in sociological and anthropological perspectives, a detailed discussion of organization theory is beyond the scope of this work.

"cognitions and perceptions of meanings and realities" (Ott, 1989, p. 69) for students, teachers, and administrators. Eisner referred to school culture as creating the "cognitive ambiance" of a classroom or school (2002, p. 157).

Schein (2004) proposed that analyzing an organization's culture occurs at three different levels. The first, or basic, level is *artifacts*. Artifacts can include physical objects, written or spoken language, rituals, and routines (Hatch, 1997). Artifacts are easy to see and observe, but may be hard to translate into meaning. The second level is *values*. Values are the beliefs, principles, goals and standards that create the unwritten rules, or norms, that a culture follows (Hatch). The third level is *assumptions*. Assumptions are invisible and taken for granted, but they derive from the implementation of values (the second level) and guide the behavior of the organization. Schein summarized the three levels:

> Though the essence of a group's culture is its pattern of shared, basic taken for granted assumptions, the culture will manifest itself at the level of observable artifacts and shared espoused beliefs and values. In analyzing cultures, it is important to recognize that artifacts are easy to observe but difficult to decipher and that espoused beliefs and values may only reflect rationalizations or aspirations. To understand a group's culture, one must attempt to get at its shared basic assumptions and one must understand the learning process by which such basic assumptions come to be. (2004, p. 36)

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Deal and Peterson (2009) recommend examining a school's history, traditions, and participants' roles in conveying the stories of history and tradition to understand a school's artifacts, values, and assumptions.

The concept of school culture in the literature may appear as school spirit, school safety, school identification, school or classroom climate, classroom context, environment, or value or meaning (e.g., Abril, 2013; Adderley, Kennedy, & Berz, 2003; Shernoff, 2013; Wang & Holcombe, 2010). For example, while the term *environment* may pertain to one's physical surroundings, it is often referred to as the social interaction between students and between students and teachers. These social interactions are patterns of relationships that are influenced by school culture. In middle school, social interactions have "tremendous influence on the development of young adolescents" (Mee, 1997, p. 8), more so than the subject matter or curriculum (Bishop & Pflaum, 2005).

The purpose of this study was to examine factors that may impact a middle school student's flow experience in a large group ensemble setting. One of these factors relates to the culture of the large ensemble in middle school. Therefore, this section of the literature will examine school culture as it relates first to middle school settings and, second, to large ensemble settings.

Middle School Culture

Reform efforts focused in middle schools to better serve young adolescent students included grouping students into smaller "schools within schools" to promote a feeling of connectedness and community, pairing students with teachers in advisory

programs to promote a feeling of support, interdisciplinary teaching, and flexible scheduling (Bishop & Pflaum, 2005; Juvenon et al., 2004). The intent of these reform efforts was to move away from the idea of teaching middle school students as if they were high school students, instead focusing on ways to create places of transition for young adolescents between elementary school and high school. Eccles et al. (1993) argued that any perceived declines in young adolescent motivation, interest, or academic achievement was a result of a school environment that did not recognize the unique needs of middle school students. This section will review literature relating to context, environment, or culture (as operationally defined earlier) in middle schools.

Wang and Holcombe (2010) hypothesized that young adolescents' perceptions of school environment were related to perceptions of engagement and actual academic achievement, as measured by grade point average. The purpose of their study was "to investigate the links between students' perceptions of school environment, school engagement, and academic achievement simultaneously" through the use of structural equation modeling (p. 639). Perceived school environment was conceptualized as five different characteristics: a school's promotion of performance goals, promotion of mastery goals, support of autonomy, promotion of discussion, and teacher social support. School engagement was conceptualized as three different characteristics: school identification, school participation, and use of self-regulation strategies. Wang and Holcombe collected data from 1046 young adolescents in seventh grade and then again from the same students when they were in eighth grade. Data collected from the participants while in seventh grade on perceived school environment were analyzed along

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with data collected from the same participants in eighth grade regarding perceptions of school engagement as well as the students' grade point averages.

After controlling for gender, race/ethnicity, socio-economic status, and prior academic performance in seventh grade, Wang and Holcombe fit a regression model that "accounted for a large option of the variance in the outcomes" (2010, p. 649). While the school environment characteristic labeled support of autonomy only significantly correlated with one facet of school engagement (school identification), the other school environment characteristics significantly correlated with two or all three components of school engagement. Performance goal structure, which emphasizes competition or comparing students to one another, had a negative correlation. This means that if students perceived their school to foster more competition between students, student engagement was predicted to be lower. All three types of school engagement positively correlated with grade point averages. Wang and Holcombe's study lends support to the idea that the school climate or environment matters in terms of school engagement and achievement.

Goodenow (1993) investigated the influence of young adolescents' feelings of belonging and support on their motivation to achieve in school, claiming that classroom peer relationships have been studied less frequently than relationships with friends or social groups in middle school. Students from one suburban New England middle school answered questions on a series of scales adapted by the researcher in one of four versions: English, math, science, or social studies. The questionnaire gathered demographic information, the students' perceived sense of belonging and support, and a

measure of motivation (students' expectations for success as well as interest, value, and support) for the particular class the survey asked about. The students' sense of belonging and support and the measure of motivation were Likert-type scale items with a five-point scale. Means for all the Likert-type scale items were "well above" the midpoint of the scale, indicating that "students expected to do well in their classes, felt they were liked and respected by classmates and teacher, and believed their course work to be valuable, interesting and important" (p. 30). No statistically significant differences were found between class subject, gender, or grade level. In a multiple regression analysis, teacher support was found to be the strongest predictor of students' expectations for success, although peer support and a feeling of belonging also contributed significantly. However, Goodenow found that there were statistically significant declines in feelings of belonging and support measures (excluding teacher support) between sixth grade and eighth grade students.

Davis (2006) explored the quality of relationships between students and teachers in the middle school setting, arguing that research supports the idea of the teacher as a strong factor in "providing classroom contexts that stimulate students' motivation and learning...and by serving a regulatory function for the development of emotional, behavioral, and academic skills" (pp. 193-194). She and her research team conducted a case study of one rural middle school in which they collected multiple forms of data throughout one academic year: survey data, interviews, and journals. Approximately 75% of the entire school population of students and teachers participated in the study. First, student participants completed a battery of eight different surveys; some of these

surveys were administered two or three times throughout the school year to the same students. Teacher participants completed a battery of five different surveys; one of these surveys was administered twice during the school year to the same teachers. Second, the research team conducted interviews with six students at three occasions throughout the school year. The students were one male and female student from each grade level (sixth, seventh, and eighth grade). The research team also conducted interviews with six teachers on three different occasions whom the principal identified as "exemplary in developing relationships with students" (p. 203). Third, homeroom teachers completed journal entries at the beginning and end of the school year regarding their beliefs about relationship quality with students.

Davis and her research team analyzed the survey data using path analysis, described as a type of multiple regression. They analyzed the interview and journal data using a constant comparative analysis, which was ongoing after the first interviews and aided the research team in developing questions for subsequent interviews. They looked for emerging themes in the interview transcripts and journal entries and conducted a cross-case analysis across the participants. Davis posited that students and teachers create their own classroom interpersonal culture in which the two together establish norms for how the classroom should function. For students, their belief about relationships with their teachers, their academic motivation, and their ability to regulate behaviors and emotions play a role in classroom interpersonal culture. For teachers, their perceived ability to manage academic and behavior problems in the classroom, the level

of structure or autonomy in the classroom, and having optimistic views of students and their potential play a role in classroom interpersonal culture.

One emergent theme in Davis' research related to the importance of peer relationship structures in the classroom. She referred to peer relationship structures as the class size and a collective identity that develops based on individual assets of students. Davis found that the six teachers who were interviewed because of their propensity to have strong relationships with students enjoyed having classes that "gelled." Davis stated:

> [The interviewed teachers] believed their classes came together to form a collective identity and that classes that gelled provided intellectual and social momentum and pressed students to interact with each other and with content.
> Classes that did not gell led to intellectual and social inertia. (2006, p. 213)

Classroom interpersonal culture, according to Davis, is the interaction not only between students and teachers but also students with each other. Davis suggested further research regarding how these relationships effect academic achievement.

The three studies reviewed in this section share a common theme of the importance of relationships between teachers and students and students with their peers in schools and classrooms. Wang and Holcombe (2010) found that having teachers who promote discussion and social support in their classrooms positively correlated with student perceptions of engagement and achievement. Goodenow (1993) found that teacher and peer support strongly predicted student achievement. Davis (2006) defined these interactions between teachers and students as the classroom interpersonal culture.

Ensemble Culture

Through the lens of organization theory, Marotto et al. (2007) stated that the large ensemble is a "fascinating laboratory" with it own "unique scope, structure, and ways of working" (p. 410). The large ensembles of bands, choirs, and orchestras in schools are their own unique sub-cultures (Morrison, 2001), characterized as a "rare space…of multiple and diverse educational means and musical and social purposes" (Allsup, 2012, p. 183). Abril (2013) specifically stated that the school band is "one unique landscape and soundscape of adolescence" (p. 435) when compared to non-music classes. Eisner (2002) attributed this sense of uniqueness in arts classrooms to the fact that the creation of art or music in schools deals with teaching students to "think and behave like artists" (p. 74). Students develop artistic dispositions, aesthetic abilities, and analytic abilities while engaged in the common enterprise of preparing music for performance (Eisner). This section will review literature relating to the culture of the large ensemble in schools.

Adderley et al. (2003) investigated four issues they identified as being related to participation in a high school music ensemble: motivation to join (and remain in) a music ensemble, perception of the ensemble by the students involved and the larger school community, the perceived meaning and value of music ensembles by students, and the social climate of the music classroom. The researchers conducted 60 semi-structured interviews of students in band, choir, and orchestra at one suburban high school and analyzed the interview transcripts. Adderley et al. concluded, "students are intellectually, psychologically, emotionally, socially, and musically nurtured by membership in performing ensembles" (p. 204). They also found that students tended to view the music

ensemble in one of two ways. First, that although a music ensemble is similar to a "traditional" academic class, students recognize that ensembles are more group-oriented and that teamwork is important. Second, the music ensemble is a social group, or family, bounded by their interest in music. Regardless of the student viewpoints expressed, Adderley et al. stated that these views "epitomized a conception of a music group that was special" (p. 203). This perceived level of importance of the social aspect of ensemble participation, the researchers stated, was a significant result of their research.

Campbell, Connell, and Beegle (2007) analyzed the responses to a national essay contest for adolescents that asked them to justify "music's continuing status as a subject for school study" (p. 223). The researchers classified the written responses of adolescents between 13 and 18 years of age into five themes: identity formation in and through music, emotional benefits, music's life benefits, social benefits, and music in schools. The researchers noted that participation in school music contributes to a group identity and social benefits. Social benefits included a sense of belonging and security within band, choir, and orchestra settings, often referring to them as a "family" (p. 230). Participation in school music also "diminishes boundaries" between people from different backgrounds, of different ages, or who have different interests (p. 230).

Hamann, Mills, Bell, Daugherty, and Koozer (1990) used a standardized assessment inventory, the Classroom Environment Scale (CES), to investigate relationships between student perceptions of ensemble participation, musical achievement, and gender. The CES consists of 90 true/false items separated into nine subscales: involvement, affiliation, teacher support, task orientation, competition, order

and organization, rule clarity, teacher control, and innovation. The subscales relating to involvement and affiliation measure the degree to which students contribute to class activities and feel connected to each other. Participants were 1843 students who were randomly selected from the total population of high school bands, orchestras, and choirs that took part in the 1988 Colorado State Ensemble Contest Festival. The level of musical achievement for these students was determined by their contest rating. For example, students who were part of an ensemble that received high contest ratings were considered to have high musical achievement.

Analysis of variance (ANOVA) results in the Hamann et al. (1990) study indicated that students with higher musical achievement (i.e., contest ratings) had significantly higher mean scores on four CES subscales (involvement, affiliation, teacher support, and order and organization) when compared to students with lower contest ratings. Results also indicated that there was a significant difference between males and females on the scale of teacher support (females had a higher mean score). Hamann et al. concluded that perceptions of classroom environment vary across achievement levels. This suggests that a student's perception of their music ensemble may be related to their performance ability.

Whereas Adderley et al. (2003), Campbell et al. (2007), and Hamann et al. (1990) examined data collected from secondary school students involved in band, choir, or orchestra, Anderson (2013) specifically examined the perceptions of teachers and students involved in high school choirs. The purpose of Anderson's correlational study was to examine the relationship between teaching style and choir students' sense of

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community. A "sense of community" included feelings of membership, trust, a fulfillment of needs, and shared emotional connection (p. 125). Students and teachers from 41 schools completed surveys. The students completed the Classroom Community Scale that consisted of 20 Likert-type items; higher raw scores indicated a stronger perceived sense of community. The teachers completed the Music Teaching Style Inventory that consisted of 57 Likert-type items and also answered open-ended questions regarding their perceptions of community in their choirs.

Results indicated that ninth graders (traditionally in their first year of high school choir) had a significantly lower sense of community scores than students in other grades and that students in auditioned choirs had a significantly higher sense of community than students in non-auditioned choirs. There was no relationship between type of teaching style and students' sense of community, but teachers indicated in open-ended responses that a sense of community was important for retention, advocacy, lifelong learning of students, and musical growth of students. Anderson suggested further research to better define and isolate teacher behaviors that impact a students' sense of community in high school choir.

Matthews and Kitsantas (2007) conducted a correlational study exploring band students' levels of perceived support by their ensemble director. Matthews and Kitsantas surveyed 91 high school instrumentalists who participated in honor bands at one of three universities. Participants responded to items on four surveys: three surveys adapted from existing sports research to measure collective efficacy, group cohesion, and motivational climate, and one survey adapted from existing music research to measure conductor

support. Results indicated moderate strength correlations between conductor support and group cohesion as well as conductor support and perceived motivational climate. A linear hierarchical regression was conducted to estimate to what extent each of the variables contributed to the variance in the participants' perception of a supportive conductor. When all the variables were considered together, they accounted for 46% of the variance in the perception of a supportive conductor. Similar to how a team athlete may feel about their coach, teacher support, collective efficacy, group cohesion, and motivational climate intertwine in a music setting.

Abril (2013) examined how high school band students described their roles in class and the value and meaning they ascribed to participating in band. He interviewed five students in a high school band in Chicago, Illinois who were considered to have a "significant dedication" to band by their teacher (p. 438). He found that the students described band as a "social learning space," in that the social dimension of playing music was important to the overall experience. This social dimension helped students create and find identity and work collectively "to meet goals more ambitious than they could ever accomplish individually" (p. 446). Also, students found the act of rehearsing, practicing, and performing music to be valuable and allowed them to "lose themselves," in that music provided therapeutic or emotional benefits. Abril noted that the student participants described a social hierarchy within the band and encouraged further research with wider samples to determine whether a social strata, or cliques, occur in band.

The band room is not insulated from the larger school culture. For example, Stewart (2013) learned that one of the schools in his multi-case study had experienced a

number of fights among students. These fights seemed to have a ripple effect on the band program, as the teacher felt he spent more time in the classroom on teaching appropriate behaviors and monitoring behaviors than he did on teaching music. Stewart examined how the Comprehensive Musicianship through Performance framework for planning instruction informed teaching practices in high school band. In this case, school culture affected the culture of the band rehearsal.

The literature reviewed in this section explored the sub-culture of music ensembles in schools. Results suggested that students in music ensembles feel a sense of group identity, characterized as a team or family (Adderley et al., 2003; Campbell et al., 2007), and that the formation of this group identity may transcend boundaries that exist outside of the music classroom (Campbell et al.). Students' perceptions of involvement, group affiliation, and support may be related to performance ability or achievement, as described by Hamann et al. (1990) and the teachers in Anderson's (2013) study. Similar to research on flow theory and middle school culture, the role of the teacher or conductor cannot be overlooked in developing ensemble culture. Matthews and Kitsantas (2007) found a sense of shared purpose among band students was related to their perception of support from the conductor. In addition, Abril (2013) and Campbell et al. suggested that participation in music has emotional or therapeutic benefits for students. A lack of research in the area of large ensemble culture exists at the middle school level, however. The design of the current study will contribute to this lack of research because it explores how band culture in middle school impacts student flow experiences.

Chapter Summary

This chapter served as an overview of the literature that informed the need and purpose of the present study. In this chapter, I discussed the conceptualization of flow theory, including how it has been measured through interviews, the Experience Sampling Method, and the Flow Scales (Jackson et al., 2010). I also examined the literature relating to flow theory in secondary schools, music ensembles, and non-ensemble music settings. Although flow theory has appeared in the ongoing discussion of student behavioral, emotional, and cognitive engagement for over 30 years, additional understanding is needed as to how flow impacts the experience of middle school band students. In addition, the concept of organizational culture as applied to schools and large ensembles was discussed, highlighting the lack of research relating to middle school ensembles and their culture. The purpose of this study was to explore selected factors that may impact a student's frequency of flow experiences in a large group rehearsal setting. Recurring factors from the literature reviewed in the chapter included student achievement or ability, the teacher's role in facilitating flow, achievement, and a supportive classroom culture as well as the role of the culture itself.

CHAPTER THREE: METHOD

This chapter will provide information on the mixed methods design used for this study on flow experience in middle level band. The first section will discuss the rationale for using mixed methods. The mixed methods design for this study will be presented in the second section, including a discussion of the sampling design used. The third section of this chapter will introduce the site for and participants in the study. The fourth section will outline the quantitative data collection materials and procedures, as well as provide a detailed plan for data analysis. The fifth section will outline the qualitative data collection procedures and accompanying data analysis plan. Verification procedures, including a statement of researcher bias, will be included in this section. The final section will outline the procedure for integrating the two strands of data in order to answer the mixed methods research question regarding flow experience in the middle school instrumental music classroom.

Rationale for Mixed Methods

Creswell and Plano Clark (2011) described four philosophical assumptions, or worldviews, that underlie research studies. Each worldview influences "how researchers conduct and report their inquiries" (p. 41). The first worldview is *postpositivism*. Researchers who adopt a postpositivist worldview approach study design with "cause-and-effect" thinking, in that they make hypotheses and test predetermined variables (p. 40). A postpositivist view is most closely associated with quantitative research. A second worldview is *constructivism*. Constructivist researchers seek to understand phenomena from the participants' viewpoints, drawing from individual perspectives to

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form patterns and understandings. Constructivism is most closely associated with qualitative research. Third, *participatory* worldviews approach research through a political lens, in that the "researcher plans for the social world to be changed for the better" (p. 41). The final worldview is *pragmatism*, which is most typically associated with mixed methods research. Pragmatist researchers use whatever practical means necessary to answer their research questions, whether that be traditionally quantitative approaches, qualitative approaches, or both approaches. Teddlie and Tashakkori (2009) stated, that in using a pragmatist worldview, a mixed methods researcher takes quantitative and qualitative approaches "seriously but then develops a synthesis for each research study" (p. 73). In this sense, both objective (traditionally identified as quantitative) and subjective (traditionally identified as qualitative) points of view occur during the study. Therefore, assumptions traditionally associated with quantitative or qualitative methods may co-exist in mixed methods research.

Similar to a pragmatic approach, Tashakkori and Teddlie (2010) refer to mixed methods as "methodological eclecticism," defined as researchers who "select and then synergistically integrate the most appropriate techniques from a myriad of QUAL [qualitative], QUAN [quantitative], and mixed strategies to thoroughly investigate a phenomenon of interest" (p. 5). Bresler and Stake (1992) echoed this "eclectic" approach to research in this statement regarding design and analysis:

> In actual life, no research study is purely qualitative or quantitative. In each qualitative study, enumeration and recognition of differences in amount have a place. And in each quantitative study, natural language description and

interpretation are expected. The distinction as we see it is an epistemological

distinction that can be identified as the distinction between inquiry for making

explanations versus inquiry for promoting understanding. (p. 78)

Other researchers subscribe to this same view, such as Gorard (2010) and S. Schensul,

Schensul, and LeCompte (2013).

It is important to articulate one's reasoning for a using a mixed methods approach

in a research study. According to Creswell and Plano Clark (2011), possible reasons for

mixed methods include (a) the need to supplement one data source with a second data

source to explain, generalize, or enhance the results; (b) the need to use a theoretical

framework to "bring about change or simply provide a lens through which the entire

study might be viewed" (p. 10); or (c) the research is be best conducted in multiple steps

or phases. Yin (2009) stated that mixed methods research allows for "a richer and

stronger array of evidence than can be accomplished by any single method alone" (p. 63).

In this study, the qualitative data complemented and enhanced the quantitative data in

that it helped to explain factors that may influence student flow experiences in middle

school band (Bryman, 2006; Creswell & Plano Clark, 2011; Greene et al., 1989).

Researchers who have studied flow recommend the use of mixed methods to

provide a deeper understanding of this multidimensional construct. Martin and Jackson

(2008) and Sinnamon et al. (2012), who both used a survey to measure participants' self-

reports of flow on a single occasion, recommended that collecting both quantitative and

qualitative data from the same sample would provide a more complete picture of flow in

athletes and musicians, respectively. Three mixed methods studies about music and flow

were reviewed in Chapter Two. Montanez (2011) and O'Neill (2009) first gathered

quantitative data from participants: Montanez used a single occasion survey and O'Neill

used the Experience Sampling Method (ESM) to gather repeated measures data. Then,

they interviewed participants who had higher levels of flow. Freer (2008) gathered

multiple forms of data for his study on teacher instructional language in middle school

choir ensembles. First, he recorded middle school choral rehearsals and coded the

teachers' instructional language as scaffolding (i.e., providing prompts for students to

assist with higher-level thinking) or non-scaffolding. Freer also asked the students to fill

out an exit survey regarding their flow experiences in class. Teacher language data and

student flow experience data were the variables included in a regression analysis.

Second, Freer used the recorded rehearsals during interviews with the teachers for

stimulated recall discussions. The quantitative and qualitative data collection methods

used in the present study will be outlined in the next several sections.

Design of the Study

This study used a convergent parallel mixed methods design (Creswell & Plano

Clark, 2011). Quantitative and qualitative data were collected concurrently, analyzed

separately, and then merged. The reason for collecting both quantitative and qualitative

data was to converge the two forms of data in order to create a more comprehensive

picture of student flow in a middle school band context. The quantitative data collection

consisted of two types of surveys: a single occasion survey that measured students'

perceptions of relationships in their classroom and a researcher-designed ESM survey for

repeated measures data. In addition, demographic information was collected for each

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student. The qualitative method of inquiry was a case study of an eighth grade band.

Data collection for the case study consisted of observations, field notes, rehearsal

transcripts, and interviews. An overview of the design for this study is provided in

Figure 2.

Convergent Parallel Mixed Methods Design

Quantitative	Qualitative

(Case Study of an Eighth Grade Band)

Data Collection	C O N C U R R E N T	Data Collection
• Students completed surveys; • Assessment scores, instrument played, grade level, and teacher ratings collected; and • Teacher instructional segments coded into activity types.		• Observed rehearsals, resulting in field notes and rehearsal transcripts; and • Conducted one teacher interview and four student interviews, resulting in interview transcripts.

Data Analysis	S E P A R A T E	Data Analysis
Multilevel regression model of response data (level 1) and student data (level 2), using covariates in order to model factors that contribute to a flow experience.		Data from field notes and transcripts analyzed for patterns and categories, codebook developed, and themes developed in order to build an explanation as to how flow may appear in the context of the ensemble.

Results from the quantitative and qualitative strands merged for triangulation. Each strand of the data was used to help explain and illuminate the other strand.

Figure 2: Mixed Methods Design for this Study

Sampling Design

　　When conducting a mixed methods study, the researcher makes decisions regarding the quantitative and qualitative samples with the goal of optimizing both in order the answer the research questions. Onwuegbuzie and Collins (2007) cautioned that "careful consideration must be made of the sample sizes needed for both the quantitative and qualitative components of the study, depending on the type and level of generalization of interest" (p. 296). The quantitative sample, for example, must be of adequate size for statistical power and decisions about generalizability must be made. The qualitative sample, in contrast, must accurately capture the experiences of the participants.

　　Onwuegbuzie and Collins (2007) stated that selecting both a *sampling design* and a *sampling scheme* are the final two steps in planning a mixed methods research study, after determining the goal of the study, its purpose, specific research questions, and mixed methods design.[6] To decide on a sampling design, Onwuegbuzie and Collins suggest (a) examining the time orientation of data collection: will the quantitative and qualitative data be collected concurrently or sequentially?, and (b) examining the relationship of the samples: will they be identical, parallel, nested, or multilevel? After the sampling design is determined, the researcher can choose the sampling scheme, which

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[6] Although there are many research designs that appear in the literature on mixed methods, Creswell and Plano Clark (2011) provided six research designs: convergent, explanatory, exploratory, embedded, transformative, and multiphase. They stress that each design has its own strengths and challenges in terms of sampling, data collection, and analysis.

is the strategy for selecting participants, groups, or units to study (Collins, 2010). Within this sampling scheme, the researcher then chooses the size for each sample.

Applying Onwuegbuzie and Collins' (2007) framework to this study, the time orientation of both strands of data was concurrent. The relationship of samples was nested, in that the qualitative case study was a subset of the participants used for the quantitative data collection. The quantitative sampling scheme was purposefully selected to be the seventh and eighth grade band classes at one middle school, resulting in a sample size of 112 students. The quantitative data were further nested in that each student provided repeated responses to the ESM survey questions. The qualitative sample consisted of all the students of one of the eighth grade band classes that participated in quantitative data collection; this eighth grade band served as a case to be studied in depth (Creswell, 1998; Stake, 1995). This sample was also further nested in that the teacher and four students were purposefully selected as "key informants" (Onwuegbuzie & Leech, 2007), which will be described in the qualitative section of this chapter. Onwuegbuzie and Leech suggest that data can be sub-sampled from a bounded case by focusing on "incidents, events, activities, documents, and the like in order to develop emergent themes; to assess the adequacy, relevance, and meaningfulness of themes; to refine ideas; and to identify conceptual boundaries" (p. 246). A visual representation of the sampling design for this study is provided in Figure 3.

Time Orientation   Relationship of Samples   Sampling Scheme & Sample Size

```
                                                    ┌──────────────────┐
                                                    │ 112 students from│
                                   ┌────────────┐   │ 4 classrooms with│
                                   │Quantitative│   │students providing│
                                   │Sample: Typical──│    multiple     │
                                   │   Case     │   │   responses.     │
                                   └────────────┘   └──────────────────┘
┌────────────┐    ┌──────────┐
│ Concurrent │────│  Nested  │
│(QUAN + QUAL)│   │          │
└────────────┘    └──────────┘
                                   ┌────────────┐   ┌──────────────────┐
                                   │            │   │  1 classroom     │
                                   │            │   │nested within the │
                                   │            │   │  quantitative    │
                                   │Qualitative │   │  sample as the   │
                                   │Sample: Typical──│  bounded case.  │
                                   │   Case     │   │ Within the case, │
                                   └────────────┘   │four students and │
                                                    │the teacher served│
                                                    │  as informants.  │
                                                    └──────────────────┘
```

Figure 3: Mixed Methods Sampling Design Used for this Study

       The purpose of this study was to obtain insights into the flow experience of

middle school students enrolled in band class. The setting was purposefully chosen in

hopes to maximize this understanding, as suggested by Onwuegbuzie and Collins (2007).

In this study, both the quantitative and qualitative samples were purposive. Quantitative

samples are often generated using probability sampling in order to adequately represent

the population of interest; therefore, a quantitative purposive sample is rare (Teddlie &

Yu, 2007). However, Hektner et al. (2007) state that ESM samples tend to be purposive

for two reasons. First, ESM studies take "considerable effort" to design and carry out (p. 34). Second, ESM samples "are targeted at understanding the experience of a specific group or groups" (p. 34). The amount of repeated measures data collected through ESM, Hektner et al. argue, is adequate "to be used reliably" in statistical analyses (p. 34).

Description of the Sample

This section will provide a detailed description of the band program that served as both the quantitative and qualitative samples for this study. First, I will describe the setting of the school district and the specific school site selected, followed by a description of the school's band classroom in order to provide context for the qualitative data. Then, I will describe the procedures for gaining permission and access to the school and student participants. Identifiers for all names and places are pseudonyms.

Setting

Harmony Middle School is situated in a growing suburban area of a large Midwestern metropolitan city. According to a report on enrollment projections and growth in the school district, the county in which the school is situated had the fastest growing population in the state between 2000 and 2010 (Thomas & Sheehan, 2012). The school district had a 2012 enrollment of 7220 students in grades K-12, of which 88.6% of the students were White, 4.5% were Asian, 3.4% were Two or More Races, 2.0% were Black or African American, 1.1% were American Indian or Alaska Native, 0.3% were Some Other Race, and 0.1% were Native Hawaiian. The average household income was estimated to be $108,614. The average sale price of a home in 2012 was $308,693. In this school district, 14.9% of students received free or reduced lunch compared to 37% of

students who received free or reduced lunch in the entire state (Thomas & Sheehan, 2012).

Harmony Middle School stands directly across the street from the district's other middle school. I learned that Harmony used to be the high school in the district until a new one was built in 2003. As I look around, both schools stand on large tracts of land, suitable for accommodating athletic fields that one would commonly see on a high school campus. The two schools are separated by their respective visitor parking lots and a two-lane road. Students walk between the two buildings to attend elective classes by using the well-marked crosswalk that, on my visits, had an adult staff member and a police officer on site to watch students and monitor traffic. Each middle school has a band program that is comparable in size, so students remain in their own schools for band class. However, the band directors from each school co-direct an after school district honor band, thereby creating an opportunity for the middle school students to collaborate musically.

Standing outside the school doors at Harmony Middle School, I notice a distinct difference between old and new in the surrounding neighborhoods. To my left stands an older neighborhood with large, single family homes nestled among hills and mature oak and pine trees. The straight two-lane road in front of the school changes to a narrow and windy road in this neighborhood, curving around the properties. To my right and a short distance away stands newer homes; these homes are two or three stories and are painted in shades of cream or grey. There are very few mature trees in this newer neighborhood.

Driving through the area, I noticed that the school property is very near the edge of the town and the high school is in an adjacent suburb.

Since Harmony Middle School was once the area high school, I am surprised by its size; the school is smaller than the newer middle school building across the street. As I enter the glass doors, I notice that the wall to the right of the main office contains enlarged school yearbook photos of the staff. Harmony Middle School is split into two parts: one side of the school houses the music classrooms, the gym, and the lunchroom whereas the other side of the school houses the general education classrooms. The music area hallway is generally quiet except when the students are passing between classes, but even then there seem to be no issues with hallway congestion. Bulletin boards in the hallway are decorated with music related announcements about upcoming concerts and band lessons as well as local newspaper articles about summer band, the district's middle level honor band, and students who were selected for the state honor band. The band area has dedicated storage, practice rooms, an office, and ensemble rooms but it is very small. These areas were purposefully built this way, as indicated by the cinderblocks used to build the walls. The band area is equipped with Wenger brand furniture: chairs, lockers, music library storage, and folder storage. Although the area is tidy, many of the band lockers are messy. The students are not required to take their instruments home at night and many lockers house instruments, lesson materials, and other school supplies.

The cream-colored band room is the shape of a squat rectangle and the five-tiered floor does not leave room for flexibility in room arrangement. The students sit in three rows and the percussion equipment takes up the back tiers – including a set of chairs that

are specifically meant for the percussion students in the fourth tier. I try not to think back to my experience as a teacher having to move all that percussion equipment and up and down the tiers in my old band room for concerts!

The front of the band room has two single blue doorways that lead to the band storage area on either side of the room. Between these two doors is a computer, an audio-visual cabinet and a large whiteboard flanked by bulletin boards. The whiteboard is partially covered by a pull-down white screen on which the teacher, Mr. Anderson, projects a PowerPoint slide with the day's agenda and announcements. On the floor, under the whiteboard and against the wall is a stack of cardboard boxes, a full size keyboard, and a table with a strobe tuner and an electric pencil sharpener. Off to the left, two low cabinets double as countertops. They are filled with extra pencils, method books, drumsticks, mouthpieces, percussion toys, oils and greases, and papers. There are a number of decorations in the room: the bulletin boards are filled with memorabilia from the local university, framed honor band photos from previous years, music related posters, and a string of holiday lights. A school marching band banner also hangs prominently in the room. Although there are a lot of objects in the band room, everything seems to have a designated place; I notice Mr. Anderson will often pick up a stack of papers and straighten them if they are a bit haphazard.

Permissions and Access

The sampling scheme (Collins, 2010) for the present study was purposeful because of my familiarity with the band program at Harmony Middle School from a previous study (Clementson, 2013). I contacted Mr. Anderson via email in the spring of

2013 to determine his interest in participating in this study. Mr. Anderson agreed to allow access to his band program and students, thus becoming the main gatekeeper for both the quantitative and qualitative strands of data collection (Creswell, 1998; Glesne, 2011). All study procedures were reviewed and approved by the school's principal and the University of Minnesota Institutional Review Board (Appendix A). After receiving approval, all of Mr. Anderson's 154 band students were recruited to participate in the study during mid-October 2013.

Parent consent and student assent were required for all of Mr. Anderson's students in order to participate in the study. Information letters about the study were sent home with students in order to have parents read, sign, and return the letters with the students (Appendices B and C). Students signed assent forms during class, agreeing to participate in the study (Appendices D and E). Although the majority of the students signed assent forms, only 72.73% of the 154 students enrolled in seventh and eighth grade band returned parent consent forms. Mr. Anderson reminded students that the surveys were optional and that, to have their data included in the research study, they needed to return signed parental consent forms. In October, after students had been in band class for approximately one and one-half months, data collection began. Any data received from students who did not have a signed parent consent form were destroyed and not included in the analysis.

Although Mr. Anderson served as the main gatekeeper for the study, I also wanted to gain access to and acceptance from the students. Glesne (2011) described the process and intended result of gaining access: "just being around, participating in

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activities, and talking informally with people gives them time to get used to you and learn that you are okay" (p. 58). I observed band lessons and engaged in informal conversations with students before and after lessons and classes. I occasionally assisted with instructional support by helping a struggling student in a lesson who was far behind his peers, playing my flute with the band, and running a clarinet sectional.

Quantitative Measurements

In this section, I will review the quantitative research questions for the study and the types of data gathered in order the answer the research questions. The quantitative research questions were as follows:

1. Do students report experiencing enjoyment during class?
2. Do students report experiencing the flow dimension of the balance between challenge and skill during class?
   a. How does the balance between challenge and skill relate to the type of classroom activities?
   b. How does the balance between challenge and skill relate to the classroom environment?
   c. How does the balance between challenge and skill relate to students' performance ability?
3. To what extent does the teacher's perception of student self-efficacy relate to an individual student's self-efficacy?
   a. How does the balance between challenge and skill relate to the match of teacher perception and student perception of student self-efficacy?

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The first type of data was obtained through student surveys taken during class: the

ClassMaps survey (Doll, 2007) and a researcher-designed Experience Sampling Form.

The second type of data was obtained from the teacher. These included an ability and

skill rating for each student, instrument played, grade, class, and scores from a

computerized recorded assessment using *SmartMusic.* The final type of data was a list of

numeric codes developed from observations of each class in which the Experience

Sampling Method data collection occurred; the numeric codes represented different types

of activities that occurred in class. Each data collection procedure is detailed in the next

several paragraphs.

ClassMaps Survey

The ClassMaps survey was developed to measure the resiliency of classrooms,

operationally defined as "six characteristics that describe the classrooms where children

can be more successful academically and interpersonally" (Doll, Zucker, & Brehm, 2004,

p. 8). These characteristics include three factors concerning the relational aspects of a

classroom (teacher-student relationships, peer relationships, and home-school

relationships, which relates to the level of involvement that the child's family has in his

or her schooling) and three factors concerning individual student characteristics that

promote autonomy (academic self-efficacy, self-determination, and behavioral self-

control) (Doll et al., 2004; Doll, Spies, & Champion, 2012). Although two more factors

were added at a later time relating to peer conflict and worry, only the original six

characteristics were measured for this study in order to remain aligned with the research

questions.

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The purpose of the ClassMaps survey is to strengthen "classroom learning ecologies and supporting students' academic engagement" (Doll et al., 2012, p. 50). Individual student data can be aggregated up to the classroom level in order to identify areas of strength and weakness in a classroom, allowing the teacher to work with students to devise and implement strategies for improvement. However, each of the six characteristics can also be measured and reported independently (Doll, Spies, LeClair, Kurien, & Foley, 2010, p. 214). For example, Knoell (2012) studied the importance of student-teacher relationships in two fifth grade classrooms by administering only the "My Teacher" subscale to students. "My Teacher" refers to the characteristic of teacher-student relationships.

The earliest version of the ClassMaps survey was administered in 1999 and several modifications have been made to strengthen its technical properties (Doll, Spies, LeClair, et al., 2010). Numerous replications of factor-analytic studies of ClassMaps suggest that the underlying structure of the survey items is robust and consistent with the conceptual framework. Construct validity was determined by identifying significant correlations between the subscales and established surveys in the field of science education that measured satisfaction and enjoyment in classrooms (Doll, Spies, Champion, et al., 2010). Reliability estimates for the subscales range from .78 to .91 (Doll, Spies, Champion, et al.; Doll, Spies, LeClair, et al.), allowing for any of the subscales to be used independently (Doll, Spies, LeClair, et al.). These results support the technical adequacy of the ClassMaps survey to measure student perceptions of the classroom environment (Doll, Spies, LeClair, et al.).

The ClassMaps version used for this study was the 42-item rating scale with items separated into the six subscales referenced above (complete survey provided in Appendix F). Students reported their level of agreement for each item using a Likert-type rating scale (*Never* = 0, *Sometimes* = 1, *Often* = 2, *Almost Always* = 3). Participant responses to items contained in each subscale were averaged to represent a single score for that subscale. The ClassMaps survey was administered to the entire sample of four classes and took between 15 and 25 minutes for students to complete. Permission was granted to use the survey by the author (Appendix G).

Student self-efficacy. A student's perception of self-efficacy was measured by the "Believing in Me" subscale of the ClassMaps survey. This subscale had reliability estimates ranging from .81 to .87 in previous studies (Doll, Spies, Champion et al., 2010; Doll, Spies, LeClair et al., 2010). Students reported their level of agreement for each item in the "Believing in Me" subscale using a Likert-type rating scale (*Never* = 0; *Almost Always* = 3*)*. Item values in this subscale were averaged to represent a single score of student self-efficacy to be used for data analysis.

Experience Sampling Method

The Experience Sampling Method (ESM) "is a means for collecting information about both the context and content of the daily life of individuals" (Hektner et al., 2007, p. 6). ESM data collection focuses on the lived experience of participants while using the tools of empirical investigation, including statistical analysis. In ESM, participants are asked to answer the same questions each time they are signaled to do so, over a pre-determined period of time. In the context of this study, ESM allowed me to learn how

the students felt about a particular activity immediately after the activity was over. As described in Chapter Two, the use of ESM is an advantage over using a single occasion survey measure in that the students' experiences were captured repeatedly in the moment.

Hektner et al. (2007) identified three types of signaling schedules used for ESM. The first is *interval-contingent sampling*, in which the participant completes self-reports at regular intervals (e.g., after every class). Freer (2008) used interval-contingent sampling to study the relationship between student flow and teacher instructional language in middle school choir by having students fill out a survey at the end of each of five classes. The second type is *signal-contingent sampling*, in which participants are signaled at random times, often by an electronic device such as a pager. Jaros (2008) used a light bulb at the front of the choral rehearsal room to signify when his participants should fill out their ESM surveys. This is the most common signaling method. The third type is *event-contingent sampling*, in which participants complete a report after a specific event. The present study used event-contingent sampling because it was the least disruptive to the structure of the rehearsal.

In the present study, students received one sheet at the beginning of each class with six of the same ESM self-report forms. Each self-report form contained three questions with a 10-point Likert-type response scale (a complete ESM form is provided in Appendix H). Students were instructed by their teacher to fill out a self-report after they completed an activity. The three questions, including the Likert-type response scales are displayed in Figure 4. The dimension of flow regarding the balance between challenge and skill is considered by some researchers to be the most important

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(Csikszentmihalyi, Rathunde, & Whalen, 1993; Hektner et al., 2007; Schmidt et al., 2007) and is often operationalized in ESM studies by asking respondents to rate the level of challenge and to rate the level of skill or ability (Hektner et al., 2007), as seen in items 2 and 3 in Figure 4.

	not at all								*very much*	
1. How much did you enjoy the activity?	1	2	3	4	5	6	7	8	9	10

	not challenging at all								*very challenging*	
2. How challenging was the activity?	1	2	3	4	5	6	7	8	9	10

	low ability								*high ability*	
3. How would you rate your ability to do the activity?	1	2	3	4	5	6	7	8	9	10

Figure 4: Researcher Designed ESM Form

Pilot test. The researcher-designed ESM survey and procedure were piloted at a large suburban middle school with two eighth grade instrumental music classes prior to primary data collection for the current study. The purpose of the pilot was to determine the amount of disruption to the rehearsal routines or the teacher's lesson plan. The total number of students responding to the pilot test was 97. Students were introduced to the study at the beginning of class and were given an opportunity to read the survey items and to ask any questions before the teacher started his lesson plan. The pilot tested the

feasibility of using an event-contingent sampling frame. The researcher stood up each time the teacher finished a segment of instruction and indicated which "Time" on the form to fill out: Time 1, Time 2, etc. The teacher commented that the surveys did not detract from the class and filling them out in between instruction segments was quick and easy. As a result, I determined that the ESM protocol was sufficient and no changes to the survey were required.

The pilot study procedures were reviewed and approved by the Director of Secondary Education for the school district (Appendix I). Because the purpose of the pilot study was to test the method of delivery for the Experience Sampling Method and not to analyze student data, neither the University of Minnesota Institutional Review Board nor the school district in which the pilot took place required the students to fill out consent forms or parent assent forms.

Teacher Perception

The teacher provided an overall rating of his perception of student ability and skill based on his previous experience with each student, using a four-point Likert-type rating scale (0 = *low*, 3 = *high*) to mirror the ClassMaps "Believing in Me" subscale for comparison in data analysis.

Student Performance Ability

As part of their curriculum, students at Harmony Middle School were required to submit a number of computerized, recorded assessments using *SmartMusic*. These assessments were exercises from their method book that are used for instruction in large

group lessons. The grades on these assessments were averaged to create a measure of student performance ability for purposes of data analysis in this study.

Activity Codes

I observed every class in which the Experience Sampling Method survey was administered, resulting in 19 class observations. I wrote down a description of what occurred in class prior to the administration of each survey. The descriptions of activities were reduced into numeric codes to be used for data analysis. Classes were videotaped in order to confirm initial data coding that occurred during classes.

Quantitative Analysis

Data collection procedures for this study resulted in hierarchical, or nested, data. Nested data structures are common in education research (Raudenbush & Byrk, 2002), as student responses (e.g., academic test scores) are nested within classrooms that are nested within schools. In this study, students provided multiple responses; therefore these responses were nested within students. A common statistical procedure for analyzing nested data is hierarchical linear modeling, or HLM (Raudenbush & Byrk). Woltman, Feldstain, MacKay, and Rocchi (2012) provided the following description for HLM:

> Hierarchical Linear Modeling (HLM) is a complex form of ordinary least squares (OLS) regression that is used to analyze variance in the outcome variables when the predictor variables are at varying hierarchical levels; for example, students in a classroom share variance according to their common teacher and common classroom. (p. 52)

HLM has been used to analyze ESM data in research on flow in students (Hektner et al., 2007; Moneta & Csikszentmihalyi, 1996; Schmidt et al., 2007; Shernoff, 2013). Moneta and Csikszentmihalyi stated that hierarchical linear modeling "provides unbiased and maximally efficient estimates of the population regression coefficients, as well as estimates of the extent of individual response differences in relation to the predictors" (p. 289). HLM is flexible in that it can handle unequal responses by students (e.g., if a student is absent for one day of data collection) as well as unequal times of survey administration (e.g., if one class has more opportunities to fill out ESM forms based on event-contingent sampling). This differs from a traditional analysis of variance (ANOVA), in which the focus is on mean change at the group level. HLM allows information about individuals to be "passed to the [regression] model for phenomena across individuals" (Maxwell & Tiberio, 2007 p. 442).

By setting up a regression model using two levels (level 1 = responses; level 2 = students), the researcher can determine the variance in the outcome variables. If there is significant variance in the outcome variable, other variables can be added to the model to determine whether they can predict this variance. For example, Schmidt et al. (2007) used HLM to measure flow while examining whether certain activities or situations were more likely to produce flow and whether some of these activities or situations were more effective at producing flow in certain types of individuals. By constructing a regression model that seemed to have the "greatest predictive power," Schmidt et al. concluded that "both internal and external dimensions of experience exert independent influence on flow" (pp. 552-553).

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Prior to conducting the HLM analysis for this study, the ESM responses to the items relating to challenge and ability needed to be combined in order to create one variable. Several variations exist in the literature as to how to create this flow dimension of the balance between challenge and skill (Hektner et al., 2007). For example, the responses could be standardized into Z-scores so that positive Z-scores indicate flow. Standardizing the responses removes the individual differences that can occur when using Likert-type rating scales, as a value of 5 may represent a "high" score to one participant but a "low" score to another participant (Moneta, 2012). The nature of HLM accounts for individual differences, however. Therefore, raw-scores are often used for ESM flow-related data (e.g., Moneta & Csikszentmihalyi, 1996; Schmidt et al., 2007). Schmidt et al. calculated the geometric mean of the challenge and skill ratings from their ESM study by taking the square root of the product of the two ratings. Moneta (2012) described the absolute difference model used in Moneta and Csikszentmihalyi's (1996) study. In the absolute difference model, the balance between challenge and skill was determined by calculating the absolute difference between the challenge rating and skill rating for each response. This means that if the absolute difference between a participant's challenge rating and skill rating equaled zero, that participant was considered to be in flow at the time of the response. If the absolute difference between a participant's challenge rating and skill rating was greater than zero, the ratings for challenge and skill differed in some way at the time of the response. Moneta (2012) stated that this model is similar to Csikszentmihalyi's original flow model (described in Chapter Two) that consists of a flow channel, where challenge and skill are in balance.

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Summary

This section described the data that were collected for the quantitative portion of the present study. Data collection included an ability and skill rating for each student by the teacher, instrument played, grade level, band class, and assessment scores. It also included a measure of classroom environment for each student as well as repeated measures of ratings of enjoyment, challenge, and skill for each student. I also coded the types of activities that occurred in class, as this was a required variable for statistical analysis. The analysis used to answer the research questions was that of hierarchical linear modeling, which accounts for variance at different levels that affect the outcome variable.

<div align="center">

Framing the Qualitative Research

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The central question guiding the qualitative portion of this study was: In what ways does the culture of the ensemble impact student flow experiences? Two sub-questions were used to guide data collection and analysis:

1. In what ways do the nine dimensions of flow manifest themselves in the students' descriptions of middle school band?

2. How does the developmental level of the young adolescent impact their descriptions of flow in middle school band?

Case Study

The primary approach for collecting and analyzing data for the qualitative portion of this study was a case study. A case study is a detailed and intensive examination of a particular phenomenon or group in a natural setting (Hancock & Algozzine, 2006; Luck,

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Jackson, & Usher, 2006). Yin (2009) explains that a case study allows the researcher to investigate a phenomenon "within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident" (p. 18). Stake (1994, 1995) makes a distinction between two different types of case studies: intrinsic and instrumental. In an intrinsic case study, the researcher studies a particular case in order to create an understanding; it is the specific person or group of people that is important and that the researcher wishes to understand. An instrumental case study, on the other hand, uses the case, or group, as a vehicle through which to illustrate the issues, ideas, or phenomena in question. Stake states that this type of case study is *instrumental* to "accomplishing something other than understanding" a particular person or group. In the present study, the instrumental case study focuses on using an eighth grade band class to study the phenomena of flow in a band ensemble setting rather than focusing on the people, actors, or observations in the case (Luck et al., 2006).

Defining the Case

For this portion of the study, I chose to implement typical case sampling and purposive sampling. Stake (1995) states that the "opportunity to learn is of primary importance" when selecting a case (p. 6). When selecting the school site for both the quantitative and qualitative strands of this study, I sought a middle school band program that had primarily one teacher and to which I could readily gain access and easily maximize what I could learn given the time frame of the study. After selecting the school, I then asked the teacher to purposively choose one of his eighth grade bands to be the case for the study. As a researcher with prior teaching experience, I relied on the

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teacher to choose which of his two eighth grade classes would be used as the case. Although I did not explicitly provide criteria for selecting which class should serve as the case, I remembered from my own teaching how factors such as the combination of students in a class or the time of day for the ensemble rehearsal might impact such a decision. The teacher decided that his afternoon eighth grade class would constitute the case. I trusted his professional judgment and his knowledge about his students.

I made the decision to use the entire band class, rather than individual students, as a case because I wanted to study the interactions between the students and their teacher. Stake (1995) stated that a case is a "complex, functioning thing" with integrated parts (p. 2). Similar decisions to define an ensemble as a case were made by Marotto et al. (2007) and Oare (2008). In their study on flow in a college orchestra, Marotto et al. used the entire orchestra as the bounded case. Oare studied a "nontraditional high school Celtic string ensemble" (2008, p. 65) in order to gain an understanding of how this orchestra integrated Celtic music into a traditionally classical ensemble.

Key informants. Key informants were purposefully selected within the case of the classroom, as suggested by the sampling frameworks put forth by Onwuegbuzie and Collins (2007) and Onwuegbuzie and Leech (2007). Collins (2010) states that strategically choosing key informants "yield[s] a depth of information or a unique perspective relative to the phenomenon of interest" (p. 357). Stake (1995) claims that informants can help with the understanding of a case, as "much of what we cannot observe for ourselves has been or is being observed by others" (p. 64). The information

that key informants provide can then be generalized to the case (Onwuegbuzie & Leech, 2007).

As the data collection period progressed, Mr. Anderson and I discussed the selection of key informants to be interviewed. Interviews with informants allow the researcher to gather multiple interpretations of the phenomena in question (Stake, 1995). I used criterion sampling to select two girls and two boys from the class so that both genders would be equally represented. Also, students needed to have submitted a completed parental consent form. During rehearsals, I took note of students who seemed to interact with each other and who made regular "appearances" in my field notes. I also noticed students who seemed to quietly go about their classroom responsibilities. I shared my observations with Mr. Anderson. These observations, paired with Mr. Anderson's prior knowledge of students, resulted in approaching two boys and two girls to ask whether they would be willing to speak with me about band class. Of the four students, one boy and girl rehearsed in the district honor band that met weekly after school; the other two students did not. The teacher also served as a key informant in order to provide background information about the band program. A diagram of the qualitative sample is provided in Figure 5.

```
                                    ┌─────────────┐
                                    │   Teacher   │
                                    └─────────────┘
                                    ┌─────────────┐
                                    │  Student 1  │
                                    └─────────────┘
    ┌─────────────┐                 ┌─────────────┐
    │ Bounded Case of │─────────────│  Student 2  │
    │ One Classroom │                └─────────────┘
    └─────────────┘                 ┌─────────────┐
                                    │  Student 3  │
                                    └─────────────┘
                                    ┌─────────────┐
                                    │  Student 4  │
                                    └─────────────┘
```
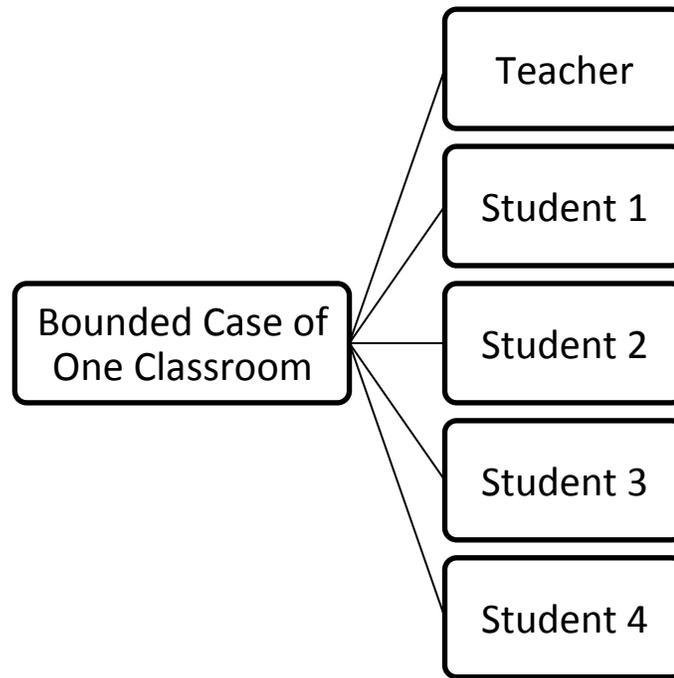
Figure 5: Case Study with Key Informants

Data Collection

During the data collection period, I first gained access through Mr. Anderson, who served as a "gatekeeper" to the school and students. I gathered a variety of data types including rehearsal observations, field notes, interviews, and an artifact called the Primer Pack. Each type of data will be described in the following paragraphs.

Rehearsal observations. I observed eight complete rehearsals of the eighth grade band that served as the bounded case. Each rehearsal was video recorded using a Sony handycam video camera positioned on a tripod near the front corner of the room. The video camera was positioned to include in the captured frame the conductor podium and as many students as possible. The videos were then downloaded onto a password-

protected computer and converted into QuickTime movie files (.mov). The audio portion of these files was then transcribed using ExpressScribe software.

Field notes. During each rehearsal, I completed field notes that described the actions of the students and the teacher and comments that I heard students say. After leaving the school each day, I reviewed my notes by typing them into a word processing program along with my thoughts and reflections about my day at the school. Because I was also collecting quantitative data throughout the school day, I was able to observe lessons and other band rehearsals, and to interact with the teacher during prep time and lunch. These informal interactions also shaped my reflective field notes. These field notes were used in data analysis and helped triangulate the data gathered through the rehearsal transcriptions described in the previous section.

Artifact. I gathered one artifact from my observations at Harmony Middle School: a book entitled *Primer Pack.* The *Primer Pack* was a collection of photocopied music, reproducible theory worksheets, band lesson grading sheets, handwritten worksheets, and music history lessons that were compiled by Mr. Anderson. There were different versions of the *Primer Pack* depending on the instrument that the student played (e.g., a trumpet student's *Primer Pack* had music specifically written for the trumpet section). Students were expected to have their *Primer Pack* with them for all rehearsals and band lessons. I noticed this artifact was used during every rehearsal that I observed.

Interviews. I conducted individual interviews with each of the five key informants: Mr. Anderson and four students. Each student was approached outside of class by Mr. Anderson and me and asked whether he or she would like to share their

experience with me by answering a few questions. All of the students appeared to be willing and eager to participate. The interviews took place during band class over two days.

Yin (2009) states that a researcher has two main objectives during an interview. First, the researcher needs to follow the line of questions that were developed when creating the case study protocol. Second, the researcher should approach the interview in an unbiased way so that participants feel as comfortable as possible in speaking with the researcher. My interview protocol was semi-structured, consisting of a set of planned questions but also allowing flexibility for me to follow up on statements that emerged naturally from each participant.

Data Analysis

I approached data analysis by first operationalizing the phenomena of flow based on Csikszentmihalyi's (1990) nine dimensions: balance between challenge and skill, merging of action and awareness, clear goals, unambiguous feedback, deep concentration, sense of control, loss of self-consciousness, transformation of time, and intrinsic motivation. This resulted in a "top down" (LeCompte & Schensul, 2013, p. 83) approach as I initially read the data looking for evidence of these nine a priori dimensions. I also began to familiarize myself with the data during this initial read through. As I read, I wrote notes in the margins related to possible recurring patterns and practices of the classroom as they appeared in the data, resulting in a "bottom up" (p. 83) approach. LeCompte and Schensul (2013) refer to this as "general coding," (p. 112) in which data is sorted into chunks or groups based on a formative model near the beginning

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of data analysis. Performing an initial read through is also advocated by Creswell (1998).

These initial passes through the data were done both by hand and using HyperResearch

software; I marked initial thoughts, potential codes, or things that appeared insightful,

interesting, or confusing.

Next, I began to create a codebook. I also created interview summaries of the

four student interviews (LeCompte & Schensul, 2013), looking for examples of

convergence and divergence in the students' voices. Then, I re-examined my research

questions to see how they might inform the coding process. As I continued to modify

and organize codes, three conceptual "bins" (LeCompte & Schensul, 2013, p. 82), or

categories, emerged: flow, the ensemble environment, and adolescence. I reviewed the

literature on flow dimensions (e.g., Csikszentmihalyi, 1990; Jackson et al., 2010) in order

to make sure that my flow codes accurately reflected Csikszentmihalyi's theoretical

framework. Building upon this information, I allowed codes to emerge from the data

within these three categories; LeCompte and Schensul (2013) refer to this as "specific

coding." As I read and reread the data, I kept my research questions at the fore. This

second stage of coding involved a spiraling or recursive process as I moved between a

priori codes, partly determined by the three categories and emerging codes that I grouped

into those categories. LeCompte and Schensul explained:

> researchers explore their data both from 'top down' (deductively, using
>
> predefined coding categories for analysis) and from 'bottom up' (inductively,
>
> developing newly identified codes/analytic categories). This spiraling or

recursive process allows researchers to respond to variation and contradiction in

the field altering their models and explanatory theories. (pp. 83-84)

This second stage was completed mostly using HyperResearch software, since it allowed

me to organize codes by grouping them or subsuming general codes into more specific

codes or categories.

The third stage of coding involved triangulating the various forms of data (e.g.,

field notes triangulated with rehearsals), writing reflective comments, and developing

potential themes. Glesne (2011) suggests conducting a thematic analysis by searching for

patterns in the data that "focus attention on unifying aspects of the culture or setting, on

what people usually do, [or] with whom they usually interact" (p. 188). Grbich (2007)

states that "data should speak for themselves" (p. 32), therefore I allowed themes to

emerge from the data rather than imposing them on the data based on careful reading and

re-reading of the data and reflection.

Verification

Creswell (1998) suggested eight different verification procedures for qualitative

data analysis in order to establish trustworthiness or validity: prolonged engagement in

the field, triangulation, peer review, negative case analysis, clarifying researcher bias,

member checks, thick description, and external audits. Of these eight, Creswell

recommended that researchers conduct at least two of the verification procedures. I

employed three verification procedures: triangulation, researcher bias, and external

audits, each of which is elaborated upon below.

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Triangulation. I triangulated the data by comparing my field notes of the actions, utterances, and descriptions of rehearsals with the rehearsal transcripts. I also compared interview transcripts of student descriptions of rehearsals to rehearsal transcripts. Student interviews were also combined into an interview summary for triangulation. According to Yin (2009), gathering multiple sources of data allows one to triangulate the data and provides evidence of a phenomenon from multiple perspectives.

Researcher bias. Clarifying researcher bias is one way of establishing trustworthiness of the data. As a middle school band director for twelve years, conducting a study with a middle school band program provided both opportunities to learn and the risk that my observations and analyses might have been clouded by my own prior knowledge. The middle school band environment is familiar and comfortable to me. In my field notes, I wrote:

> sometimes I feel like I'm just watching a generic middle school rehearsal, with all its middle school quirkiness. Am I? Or is it just similar to my previous teaching situation so it's familiar to me, so I see this as normal. (field notes, November 13, 2013)

At the end of each day of observation, I typed my field notes into a word processing program and included reflective memos similar to this one. I kept the following statement by Glesne (2011) in my mind throughout my time at Harmony Middle School: "The strange becomes familiar in the process of understanding it. To make the familiar strange is often more difficult because you must continually question your own

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assumptions and perceptions, asking yourself: Why is it this way and not different?" (p.

67). I tried to look at the middle school band rehearsal as something unfamiliar.

To account for this bias, I collected multiple sources of data, including interviews

from key informants, field notes, rehearsal transcripts, and an artifact. These data

allowed for triangulation, as described in the preceding section. I also questioned my role

as a researcher at Harmony Middle School. Glesne (2011) describes the roles of the

researcher as ranging across a continuum, with *observer* at one end, followed by *observer*

as participant, then *participant as observer*, and, finally, *full participant* on the other end

of the continuum. An observer has little to no interaction with the people she is studying.

An observer as participant interacts with the study participants, but usually doesn't assist

with tasks or participate in activities with the group being studied. A participant as

observer, on the other hand, interacts with participants and may assist with tasks, thus

becoming a part of the group. Finally, the full participant is "a functioning member of

the community" (p. 65). In this study, I travelled between the *observer as participant* and

the *participant as observer* points on the continuum. I interacted with students as they

entered the band room before classes and lessons and while I passed out and collected

ESM forms at each visit. I also helped monitor the administration of the ESM forms,

answering questions posed by both Mr. Anderson and the students. I became a

participant as observer on days when I gave an individual lesson to a trombone player

who was behind his peers and when I ran a clarinet sectional with the seventh grade

bands. During classes, Mr. Anderson used my presence to provide evidence for

comments he made about one band's performance compared to another band's, such as:

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[students in second hour] are ahead of you on this tune. If you don't believe me, you can ask Ms. Clementson" (rehearsal, November 6, 2013). Although not all of these examples occurred with the eighth grade case study participants, it is still important to acknowledge my role as both a researcher at Harmony Middle School.

Another approach I used to explore my bias towards this research study was phenomenological reflection, or bracketing (Grbich, 2007). Phenomenology is a qualitative approach that attempts to understand how participants make sense of their lived experiences of a particular concept or phenomenon (Bresler, 1995; Grbich). Bracketing, or "putting aside" (Grbich, p. 86), one's personal experiences is undertaken in phenomenology in an effort to suspend judgment during data collection and analysis (Creswell, 1998). Because flow theory is a phenomenon, or an internal state of consciousness, I reflected upon my own flow experiences as a musician, both as a child and adult. These reflections are provided in the following epoche.

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Casey's flow epoche.

When I was four or five years old, my mother decided to begin taking piano lessons. My parents had never been involved with music in or outside of school as children; piano lessons were definitely a new adventure in my mother's adult life. She secured a turn of the century upright piano, refinished it (mom also likes to refurbish old wood furniture), and suddenly our small living room became even smaller with this very large piano. I was fascinated with how she would sit at the piano, look at books with

music printed on the pages, and magically make the printed music turn into sound. Curious to how she was doing this, I took her piano books and, with very little guidance, started to teach myself how to read music and play. And I loved it! Each week, my mother went to her piano lesson and came back with a list of exercises and songs to practice. Her homework became my pretend "homework." When my mother realized that I could play her homework better than her, she enrolled me in piano lessons too. I was five and I loved my piano teacher and having a set of piano books that were just for me.

My identity as a pianist lasted through my undergraduate years at the University of Minnesota as I continued to take lessons for a year or two before the music education coursework got to be too substantial along with the requirements for a performance degree in flute. As I look back on this part of my musical life, I have a number of experiences in practice or performance that I would label as flow experiences. I distinctly remember that I could hear myself think as I played while at the same time I could shut off everything around me and just *play*. My own brain was like my coach, coaxing me through difficult parts: *Ok, Casey, here comes that hard part, remember you need to make sure your fingers stay relaxed and even, just like you practiced…here it comes…yes, you did it!* My awareness was at a high level, but it did not distract me from my actions of moving my fingers across the keyboard. I often felt in control in that I knew how to strike the keys to achieve the sound and style that I wanted to hear.

As a pianist, there are sometimes things out of your control. I remember one recital where I was upset with the piano that I had to play on. My piano teacher during

my high school years scheduled the annual recital at her husband's American Legion hall. Usually recitals were scheduled at churches or the local music store that had its own small recital hall, so the American Legion was a departure from the norm. The piano there was old and rickety. I was playing Debussy's *Clair de Lune,* which ends quietly in the upper range of the keyboard. One of the keys was broken that I needed for the final chord. As I played that last, quiet sound, I could hear that faint, thud-like, distorted "plink" that a broken key makes. I distinctly remember not being pleased with that performance because not for lack of preparation but for the instrument I had to use.

In late elementary school, I began playing the flute because my friend Jenny, who was a year older than me, played the flute. I was not very good at the flute, I think, because there were too many variables in making sound. It took me years to understand how to control my air and my embouchure to achieve the correct sound for the correct moment. I felt there were many more things to attend to when playing flute compared to playing piano: the tongue, the throat, the jaw, the chest, and the diaphragm all had to work together to create tone and minute changes in one or all of those body parts were required for every single phrase. My flute teacher was incredibly patient with me for many years until, in high school, I became interested in the piece *Incantation and Dance* by John Barnes Chance. *Incantation and Dance* was the piece all the flute students in band needed to play for a chair placement audition. There is a hauntingly beautiful flute *soli* at the beginning and lots of technical runs in the rest of the piece. I was motivated because of this piece of music to prepare for the upcoming chair placement audition. I brought the music to my flute teacher and she helped me through it. I remember

practicing in my room late at night with my metronome, inching up the tempo little by little until I could play the technical passages. The metronome mixed with my determination somehow changed my flute playing forever. With each tempo setting, the metronome provided me with a small goal to beat. I went into my audition and moved from the bottom of the flute section to the top. After that day, I became intrinsically motivated to understand what I needed to do to become a better flutist and developed an awareness of what my body needed to do to be successful.

For the past 11 years, I have played in the Encore Wind Ensemble, an auditioned group of wind, brass, and percussion players in the Twin Cities area. In February, we performed at the Minnesota State Music Educators Association annual conference with a number of guest artists. One piece we performed was Alfred Reed's arrangement of J.S. Bach's *My Jesus! Oh What Anguish.* The piece isn't technically challenging, but Bach requires great concentration to play. At our dress rehearsal, my pitch and intonation were perfect, which is no small feat for any wind player! My sound was right in the pocket to balance and blend with the rest of the ensemble; it couldn't get any better than it was at that moment. Because of this, my mind felt completely relaxed and free to enjoy what was happening in that moment of rehearsal. I was able to take deep enough breaths to sustain through all my phrases and control my dynamics. It was beautiful. I told my colleagues in the flute section that my performance of that piece was perfect that day at that time, and it would never be like that again.

Flow experiences don't happen every time I rehearse, practice, or perform. As I look back, I remember very few moments from middle school band beyond spending

time with my friends and knowing that my band teacher worked very hard for all of her students. My mother did admit to me when I was older that my middle school band was, indeed, not very skilled and the music didn't really sound like anything good or, worse yet, recognizable. As an adult, there are many days that can go by before I feel moments when everything feels easy and free. I have come to learn that familiarity with pieces helps: I've been playing for so long in Encore that I've played some pieces many times. Not only do my fingers have muscle memory when I repeat a piece, but my entire body does, including remembering how it should feel. This familiarity certainly helps provide opportunities for flow experiences.

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External audit. An external audit was used to verify the process of data analysis and to determine whether or not the conclusions were supported by data (Creswell, 1998). I selected two external reviewers who were not affiliated with the study or with each other in any way. Both reviewers had prior experience using qualitative methods. I sent the following items to each reviewer: a coded interview transcript, a coded rehearsal transcript, an un-coded interview transcript, an un-coded interview transcript, and the codebook. Each auditor was asked to review the data, to confirm or question any codes or developing themes, and to suggest any additional codes or developing themes.

Mixed Methods Data Integration and Analysis

In line with the mixed methods design outlined at the beginning of this chapter, the quantitative and qualitative data were analyzed separately, then integrated to answer

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the mixed methods question: To what extent do the quantitative results on flow and enjoyment in the classroom intersect with the perceptions of flow shared by students? Creswell and Plano Clark (2011) provide a number of suggested techniques for integrating quantitative and qualitative data including (a) side-by-side comparison, (b) joint display, and (c) data transformation analysis (pp. 222-232). In the present study, the data were integrated using a side-by-side comparison matrix with the common element being factors that influence flow experiences.

Chapter Summary

This chapter provided information on the mixed methods design used for this study on flow experience in middle level band. The first section discussed issues related to sampling design in mixed methods research followed by the sampling design used for this study. The second section outlined the quantitative data collection materials, procedures, and an overview of hierarchical linear modeling as the statistical procedure for analysis. The third section explained the qualitative data collection procedures and its accompanying data analysis plan. The final section outlined the analysis plan for integrating the two strands of data in order to answer the mixed methods research question. The results of the quantitative and qualitative data analyses will be presented in Chapter Four; the results of the mixed methods analysis will be presented in Chapter Five.

CHAPTER FOUR: ANALYSES AND RESULTS

The purpose of this mixed methods study was to explore selected factors that may impact a student's frequency of flow experiences in a large group rehearsal setting and examine the ways in which these flow experiences may relate to achievement and enjoyment in a middle school band. This chapter presents the results of both the quantitative and qualitative strands of data collected for this mixed methods study. Seventh and eighth grade band students provided the quantitative data analyzed for this study through their responses to multiple administrations of a survey using the Experience Sampling Method (ESM). One of the eighth grade bands provided qualitative data in the form of a case study design.

This chapter will begin with the results of the quantitative analysis employed to specifically answer the quantitative research questions. Next, the results of the qualitative analysis will be described. Qualitative data analysis consists of a description of the case, the emergent themes from the case, and the dimensions of flow present in the data. These pieces of the qualitative analysis will then be used to address the qualitative research questions.

Quantitative Results

A correlational research design was employed to determine the relationships between selected variables and students' flow dimension of the balance between perceived challenge and perceived skill in an activity. The sample consisted of 110 students from four band classes at one middle school; all classes had the same band teacher. Students completed a one-time ClassMaps survey to measure characteristics of

the classroom environment. Students also completed the same ESM survey multiple times during class over multiple days in which they rated their levels of enjoyment, challenge, and skill in relation to the activity they just completed. I observed and video-recorded each rehearsal in which the ESM surveys were administered in order to code the types of activities that occurred. ESM was described in Chapter Three and its application to research on flow was described in Chapter Two; the ESM survey used for this study can be found in Appendix H. In addition, the teacher provided a rating of his perception of each student's ability and skill as well as the scores from their *SmartMusic* performance assessments.

Descriptive Data

Four classes of seventh and eighth grade students provided multiple responses though the ESM, resulting in 2,143 responses that were used for HLM analysis. The collection of these data used event-contingent sampling; the teacher instructed students to fill out a survey during transition times from one activity to the next. Therefore, none of the classes filled out surveys at the same time. In addition, some classes participated in the Experience Sampling Method for more days than others (Table 1). Means and standard deviations for the repeated measures collected via ESM are reported in Table 2.

Table 1: Frequency of Days and Events per Class of the Experience Sampling Method

Class	Total days of ESM	Range of events per day of ESM
Seventh Grade, Class 1	2	3-4
Seventh Grade, Class 2	2	3-4

Eighth Grade, Class 1	8	3-6
Eighth Grade, Class 2	7	3-6

Table 2: Descriptive Statistics of Student Responses (2,145 Responses)

Survey item	*M*	*SD*
Enjoyment (ENJOY)	6.41	2.61
Challenge (CHALL)	3.39	2.19
Ability (SKILL)	8.56	1.51

Note. Responses measured on a 10-point Likert-type scale (1-10)

Students provided responses to a one-time ClassMaps survey. This survey measured perceived characteristics of the classroom environment. Means for each subscale of the ClassMaps survey are reported in Table 3. The average score of students' *SmartMusic* assessment scores was also collected, resulting in a mean score of 42.84 out of a maximum of 50 (*SD* = 10.02).

Table 3: Descriptive Statistics of Classroom Environment Measure (N = 110)

ClassMaps subscale	*M*	*SD*
Believing in Me (BIM)	2.55	.410
Following the Class Rules (FCR)	1.87	.563
My Classmates (MC)	2.49	.621
My Teacher (MT)	2.60	.474
Taking Charge (TC)	2.25	.482

Note. Responses measured on a four-point Likert-type scale (0-3)

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Research Question 1: Do students report experiencing enjoyment during class?

The level of enjoyment (ENJOY) was measured on a 10-point Likert-type scale with values ranging from *not at all* (1) to *very much* (10). There were 2,143 responses for this item. As seen in Figure 6, the mean enjoyment rating was 6.41 (*SD* = 2.62) and the data values are negatively skewed (-.380, *SE* = .053), suggesting that, in general, students enjoyed the activities they did in class with a larger number of students represented in the high range of the frequency distribution than in the low range.
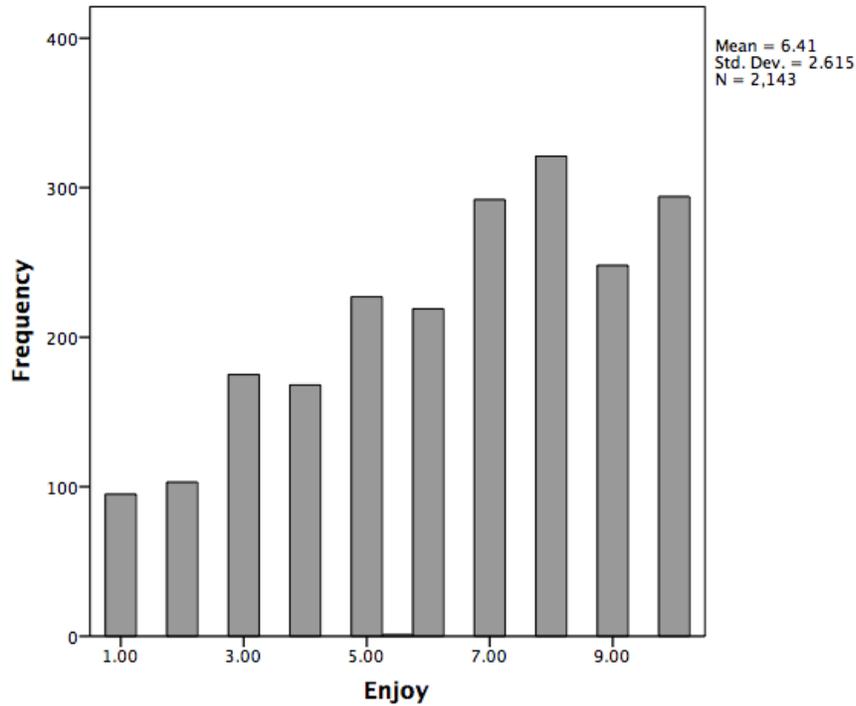
Figure 6: Mean Enjoyment Rating

In addition, the level of challenge (CHALL) was measured on a 10-point Likert-type scale with values ranging from *not challenging at all* (1) to *very challenging* (10). There were 2,145 responses to this item. The mean level of challenge was 3.39 (*SD*

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=2.19), with responses positively skewed (.78, *SE* = .053), indicating that students did not find class activities to be challenging with a larger number of students represented in the low range of the frequency distribution than in the high range. The level of skill (SKILL) was measured on a 10-point Likert-type scale with values ranging from *low ability* (1) to *high ability* (10). There were 2,144 responses to this item. The mean self-reported level of skill was 8.56 (*SD* = 1.51), with responses negatively skewed (-1.37, *SE* = .053), indicating that students rated themselves as being highly skilled in class with a larger number of students represented in the high range of the frequency distribution. The histograms for the mean ratings of challenge and skill are provided in Figure 7 and Figure 8, respectively.

Mean = 3.39
Std. Dev. = 2.192
N = 2,145
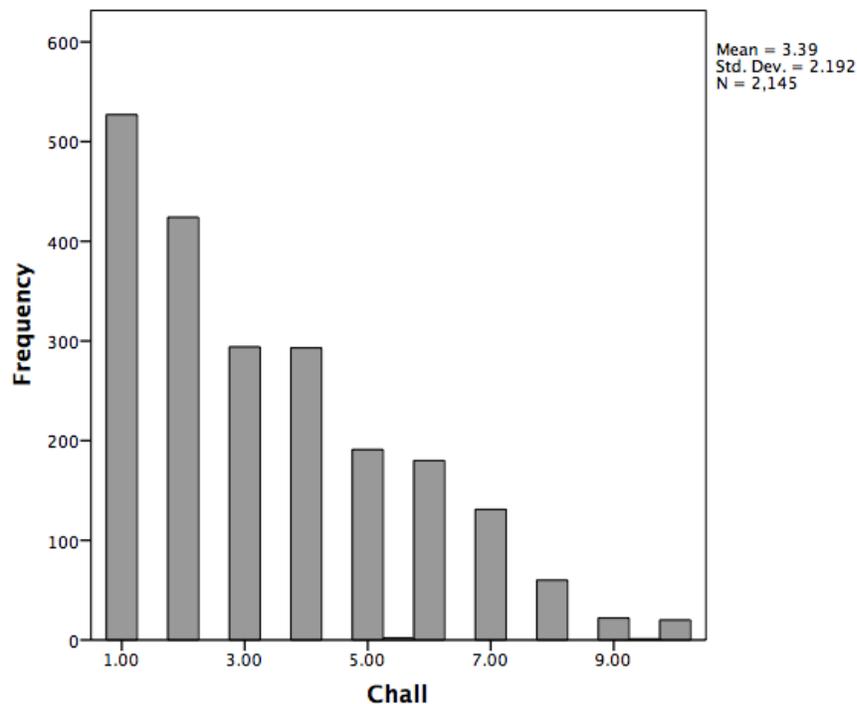
Figure 7: Mean Challenge Rating

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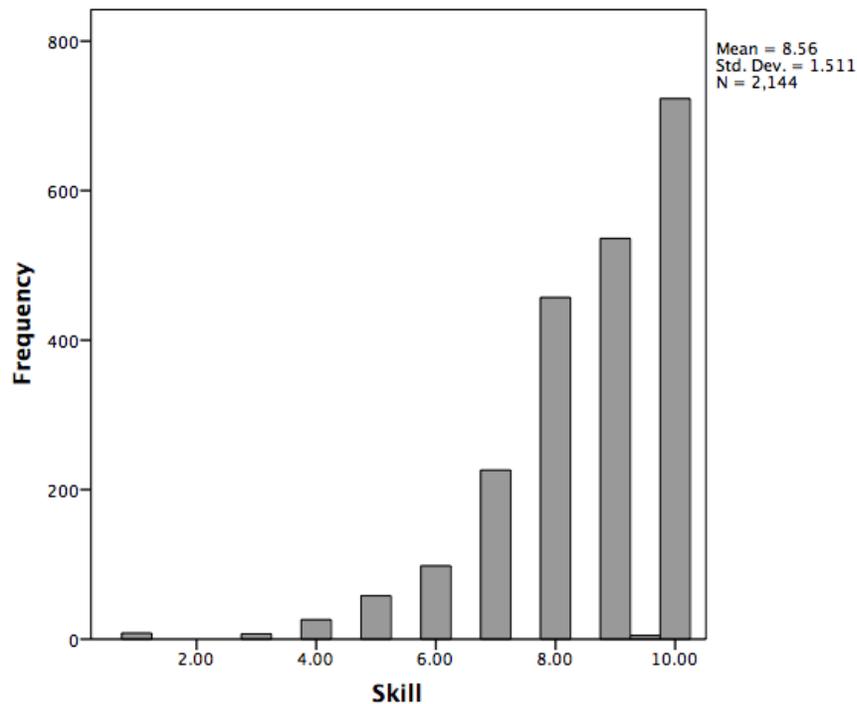
Figure 8: Mean Skill Rating

The relationships of the level of enjoyment (ENJOY) to the level of perceived skill (SKILL) and to the level of perceived challenge (CHALL) were both calculated using a Spearman's rho correlation. Spearman's rho was used because these data had evidence of skew. There was a very weak relationship between ENJOY and SKILL (r_s=.128, $p < .001$, two-tailed). There was also a very weak relationship between ENJOY and CHALL (r_s=.081, $p < .001$, two-tailed).

Research Question 2: Do students report experiencing the flow dimension of the balance between challenge and skill during class?

As described in Chapter Three, the balance between challenge and skill (DIFF) was determined by calculating the absolute difference between the challenge rating and

skill rating for each response. This means that if the absolute difference between a student's challenge rating and skill rating equaled zero, that student was considered to be in flow at the time of the response. If the absolute difference between a student's challenge rating and skill rating was greater than zero, the ratings for challenge and skill differed in some way at the time of the response. The maximum absolute difference between a student's challenge rating and skill rating was nine.

In order to facilitate the interpretation of the subsequent hierarchical linear modeling analyses used to answer research questions 2a, 2b, and 2c, and research question 3a, the absolute difference values were reverse coded. In other words, a larger value indicated that a student was either in flow (e.g., a value of nine) or approaching flow (e.g., a value of seven or eight) whereas a smaller value indicated that a student was not in flow (e.g., a value of one or two). The mean score for the reverse coded absolute difference between challenge and skill was 4.58 ($SD = 2.88$) and the data values were positively skewed (.337, $SE = .053$) as displayed in Figure 9. This balance between challenge and skill (DIFF) was used as the outcome variable for the hierarchical linear modeling analyses that will be described after providing the results for research question 3.
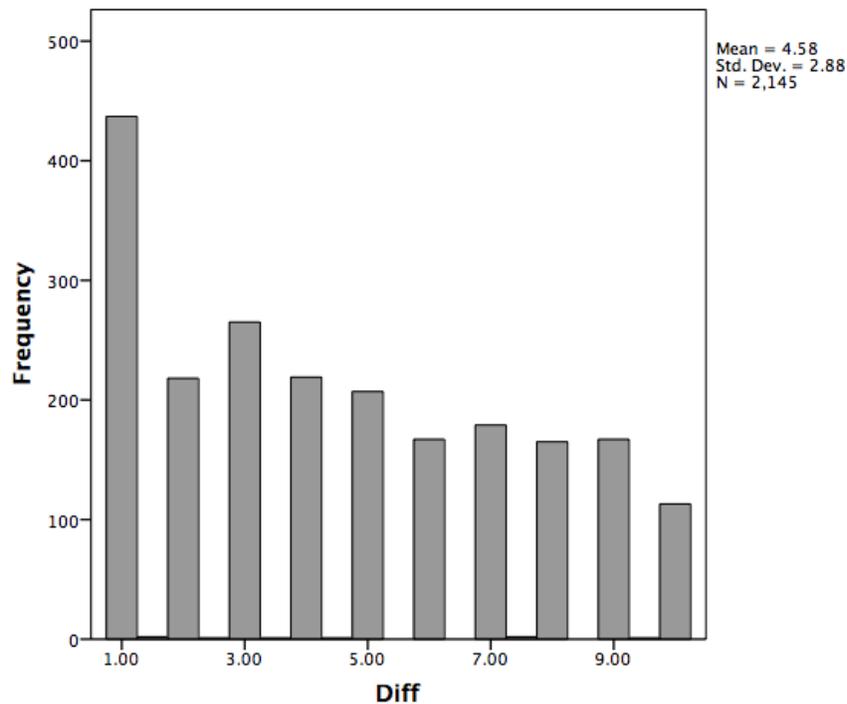
Figure 9: Absolute Difference Between Challenge and Skill

Research Question 3: To what extent does the teacher's perception of student self-efficacy relate to an individual student's self-efficacy?

Results from a previous study conducted by the present researcher suggested that students were more likely to experience the nine dimensions of flow if their teacher's perception of their individual skill matched the students' own perception of skill (Clementson, 2013). Therefore, this research question was included to determine whether similar results would be generated in the context of the present study. The teacher provided a rating of his perception of each student's skill and ability on a four-point Likert-type scale, with 0 representing the lowest rating of a student's ability and skill and 3 representing the highest rating of a student's ability and skill. The mean

teacher rating for all students was 2.34 (*SD* = .727). These ratings were then compared to

the students' mean response to the Believing in Me (BIM) subscale of the ClassMaps

survey. As shown in Table 3, the mean student rating from the BIM subscale was 2.51

(*SD* = .527).

Because both teacher ratings and student ratings suggested non-normality when

examining boxplots and skewness, a Spearman's rho correlation was calculated to

determine the relationship between teacher rating and student rating values. There was a

moderate, positive, monotonic correlation between teacher rating and student rating (r_s =

.595, n = 110, p < .001, two-tailed).

In order to create a dichotomous variable between teacher rating and student

rating to be used in the HLM analysis, the absolute difference between the two ratings

was calculated for each student. If this value was 0.5 or less, it was considered a match

between teacher and student. This value was calculated for the 110 students who

provided both ClassMaps survey data and ESM responses. Of these students, there were

71 teacher and student rating matches (64.5%) and 39 teacher and student rating non-

matches (35.5%). Matches were coded as "1" and non-matches were coded as "0" for

subsequent HLM analysis.

HLM Analysis

Results obtained from the second and third research questions provided the

outcome variable and one of the predictor variables for HLM analysis. As described in

Chapter Three, HLM is a statistical procedure that is well-suited to analyzing nested data

(Raudenbush & Bryk, 2002; Woltman et al., 2012) and, more specifically, ESM data

(Hektner et al., 2007). Woltman et al. (2012) stated:

> hierarchical linear models allow for the simultaneous investigation of the
> relationship within a given hierarchical level, as well as the relationship across
> levels. Two models are developed in order to achieve this: one that reflects the
> relationship within lower level units, and a second that models how the
> relationship within lower level units varies between units. (p. 56)

In the present study, repeated ESM survey measures were nested within students, thus the data structure for this analysis has two levels: single ESM measurements are modeled at Level 1 and students are modeled at Level 2. Because determining the best fit model is an iterative process, the following research sub-questions will be examined together:

> 2a. How does the balance between challenge and skill relate to the classroom environment?

> 2b. How does the balance between challenge and skill relate to the classroom activities?

> 2c. How does the balance between challenge and skill relate to students' performance ability?

> 3a. How does the balance between challenge and skill relate to the match of the teacher perception and students' perception of student self-efficacy?

The outcome variable was the balance between challenge and skill rating (DIFF) that was calculated to answer Research Question 2. The only Level 1 predictor variable was the type of activity that occurred prior to each ESM survey. Classroom activities were coded by the researcher into eight categories: rehearsing repertoire, warm-ups,

tuning, sight singing, lecture or demonstration, listening and critiquing, rehearsing and video, or video only. Because this variable was categorical, it was necessary to create a dummy variable to be used for HLM analysis. A dummy variable is a variable with only two values: usually zero and one. Therefore, I chose to use rehearsing repertoire as the reference variable, labeled "1," and to group the remaining seven classroom activities into a variable called "not rehearsing repertoire," labeled "0." The Level 2 predictors were variables that related to the student and only measured once. These predictors included the ClassMaps survey results, the performance ability mean score, and the match of the teacher perception and students' perception of student self-efficacy. All HLM analyses were conducted with the *HLM 7* computer program (Raudenbush, Bryk, & Congdon, 2010). Full maximum likelihood parameter estimation was employed to generate variance components because the fixed effects differed for each model (Garson, 2009). Cases with missing data were excluded. All coefficients presented are non-standardized.

      Unconditional model. A fully unconditional model was estimated to assess whether there was significant between-response variance in the balance between challenge and skill response variable (DIFF). The unconditional model is equivalent to a one-way analysis of variance and, in this study, tests whether there are any differences at the student level on the DIFF outcome variable. The unconditional model also provides the amount of variance within repeated measures and between students (Woltman, 2012).

      The result for the unconditional model was $X^2(109) = 1153.31$, $p < .001$, indicating that there was indeed sufficient variance in the DIFF outcome variable at the

student level. This significant result provided justification for proceeding with the HLM

analysis in order to find a conditional model that could potentially explain some of the

variability. The variance component at Level 1 (response level) was 5.59 and the

variance component at Level 2 (student level) was 2.77. 33% of the variance in DIFF

was at the student level (Level 2) and 67% of the variance in DIFF was at the response

level (level 1), as determined by calculating the interclass correlation, which is the ratio

between student variance to the total variance. This means that two-thirds of the

variation in DIFF scores was due to fluctuations experienced by the same student as he or

she experienced band class throughout the data collection period; one-third of the

variation was attributable to differences between students. For example, a student's

perceived balance between challenge and skill may have been high during the warm-up

and low during watching a video in the same class period; this variation in scores was

more likely due to changes from moment to moment (e.g., a different activity) rather than

differences in student characteristics (e.g., performance ability).

Several assumptions were examined. It was assumed that student and response

errors were independent and normally distributed. Examination of the distribution of the

residuals at both the response level (Level 1) and student level (Level 2) were examined

and found to be normal (Figure 10).
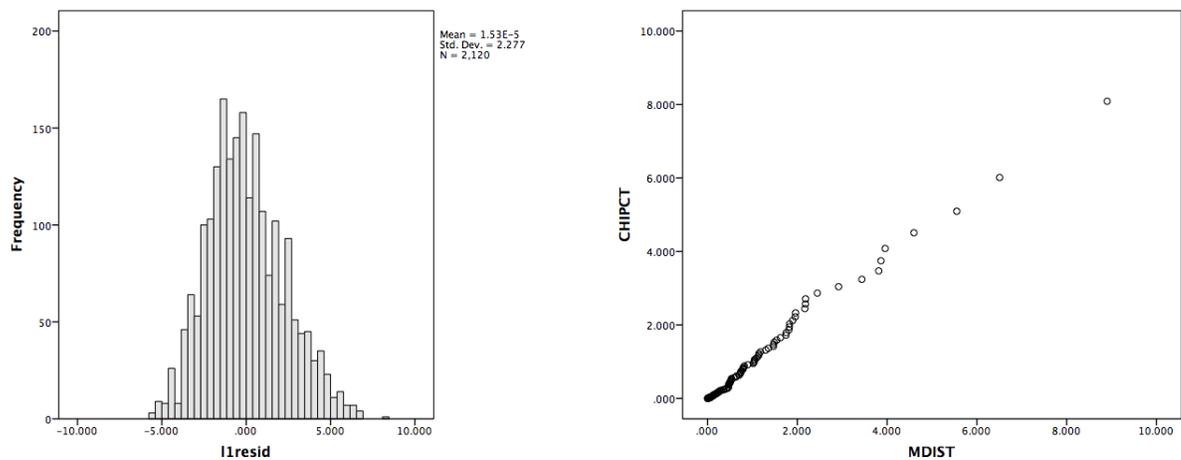
Figure 10: Residuals from Level 1 and Level 2 Data

Models for each variable. Each predictor variable at Level 1 and Level 2 was added individually to the unconditional model and the level of significance was determined for each. First, in order to answer Research Question 2A, I added the Level 1 predictor of activity to the unconditional model. The results of fitting activity to the model support the positive relationship between activity and DIFF scores ($b = 0.86$, $p <$ .001). This means that students in this sample were more likely to experience the flow condition of the balance between challenge and skill when they rehearsed repertoire when compared to doing other activities in class that did not include rehearsing repertoire. Effect size was determined by calculating the variance explained by activity. This was determined by subtracting the sigma value of the unconditional model by the sigma value of the current model and dividing the result by the sigma unconditional null. The results indicated that activity explains 3% of the total variance in DIFF scores.

Research Question 2b involved entering a number of Level 2 predictors for classroom environment to the unconditional model: Following the Class Rules (FCR),

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My Classmates (MC), My Teacher (MT), Taking Charge (TC). Each predictor was modeled individually and the results were examined for significance. Of these four predictors, only the model for Taking Charge (TC) had a significant result ($b = -1.29$, $p < .001$). This means that a student was more likely to have a lower DIFF score, thus indicating not being in flow, if they had a higher Taking Charge score. The effect size (r^2) for this predictor was .136; therefore, Taking Charge explains 13.7% of the between-student variance in DIFF.

The model for Research Question 2c included a covariate for average performance ability; the result of this model was not significant ($b = -.028$, $p = .088$). This indicates that performance ability did not have an effect on the DIFF score for each repeated measure response.

The model for Research Question 3a involved entering the dichotomous variable of match (1) or no match (0) between teacher and student perception of skill as a possible covariate. The match of teacher and student perception had a significant effect on the unconditional model ($b = -1.04$, $p = .004$). The effect size was .075, or 7.5%. The DIFF score was lower when students' self-efficacy rating matched their teacher's rating of the student's ability and skill.

Finally, the three significant predictors were added into a final comprehensive model. All three fixed effects tested remained significant. The results suggest that both internal (feelings of taking charge) and external dimensions (activity type) of experience exert independent influence on the balance between challenge and skill. The student level (Level 2) residual variance component for the DIFF intercept was 2.17, a 22%

reduction in variance from the fully unconditional model. This indicates that approximately 22% of the variance in mean DIFF between students was accounted for by the variables in the final model. In the unconditional model, the intercept was 4.83, meaning that the average DIFF of a randomly selected student was expected to be 4.83 at any given time the ESM form was filled out. By adding the three predictors of activity type, Taking Charge, and Match to the model, the intercept changed to 7.89. This means that, if these three variables were taken into account, the average DIFF score of a randomly selected student was expected to be 7.89 or closer to being in flow as measured by the balance between challenge and skill. A deviance test confirms that this final model fits the data better than the unconditional model; the three-predictor model has more explanatory power than the unconditional model. The findings of the HLM analysis are summarized in Table 4.

Table 4: Results of Hierarchical Linear Modeling to Fit the Response Data

Parameter	Unconditional	Research Question 2a	Research Question 2b				Research Question 2c	Research Question 3a	Final Model
Fixed Effects									
Intercept β_{00}	4.83***	4.83***	5.91***	4.94***	6.35***	7.75**	6.05***	4.83***	7.89**
Activity β_{10}		.86***							.86***
FCR β_{01}			-.57						
MC β_{01}				-.04					
MT β_{01}					-.58				
TC β_{01}						-1.29***			-1.35***
Performance β_{01}							-.03		
Match β_{01}								-1.04**	-1.10**
Variance Components									
Level 1									
Within response e	5.59	5.42	5.59	5.59	5.59	5.59	5.59	5.59	5.41
Deviance	9900.70	9836.64	9897.24	9900.67	9898.17	9887.15	9897.79	9892.22	9812.23

Note. FCR = Following the Class Rules, MC = My Classmates, MT = My Teacher, TC = Taking Charge

**p<.01, ***p<.001

Summary

The preceding section provided an analysis of the seven research questions for the quantitative strand of data collection. Descriptive data indicated that, although students generally enjoyed the activities they did in class, they rarely reported experiencing a balance between perceived challenge and skill ($M = 4.58$, $SD = 2.88$). This balance is considered to be an important dimension of flow (Moneta, 2012). When used as an outcome variable in an HLM regression model, the intercept was 4.83. This means that the average DIFF score from an average student is expected to be 4.83. Various predictors were added to a multi-level model regression equation to examine their relationship with the DIFF outcome variable. Three predictors were found to be significant: Activity, Taking Charge, and Match. The next section of this chapter will provide the findings of the qualitative data.

Qualitative Results

The qualitative analysis of this study is intended to provide a picture of what flow may look like in a middle school band setting. This section provides a detailed description of the ensemble case that was examined, an analysis of the emergent themes supported by the data, and the flow dimensions that were identified through careful analysis of the data. This section will begin with a description of the key informants (Collins, 2010; Onwuegbuzie & Leech, 2007) who shared their insights about their band class and flow, followed by a description about a typical day in eighth grade band at Harmony Middle School. Following these descriptions, themes will be explored for the case; this method of analysis is supported by Creswell (1998), Glesne (2011), and Grbich

(2007). Then, flow dimensions will be explored in the context of the case. Finally, the data will be used to answer the research questions for this portion of the study, as outlined in the following paragraph.

The qualitative portion of the study was guided by the following question: In what ways does the culture of the ensemble impact student flow experiences? Two additional sub-questions guided data collection and analysis:

1. In what ways do the nine dimensions of flow manifest themselves in the students' descriptions of middle school band?

2. How does the developmental level of the young adolescent inform their descriptions of flow in middle school band?

Overview of Qualitative Method

As described in Chapter Three, qualitative data collection took the form of an instrumental case study (Stake, 1994, 1995). In an instrumental case study, the case or group studied serves as a vehicle in which to illustrate the issues, ideas, or phenomena in question. Each case is unique because the people involved carry their own perceptions and beliefs regarding the issues, ideas, or phenomena being studied (Bresler & Stake, 1992). For this reason, Bresler and Stake recommend finding people, groups, or situations that can easily be accessed and not to be concerned with probing in different directions than originally planned.

In the context of this mixed methods study, one of the eighth grade bands from the quantitative sample was purposively chosen to be the case in order to examine what flow may look like in a middle school ensemble setting. Data collection included

observing rehearsals, writing field notes, and conducting interviews with key informants (Collins, 2010; Onwuegbuzie & Leech, 2007). Because my mixed methods sampling design used participants from only one school, I was able to immerse myself in the setting at Harmony Middle School. I observed other band classes, observed small group lessons, and ate lunch with the teacher. Therefore, my field notes included informal conversations and memos regarding my observations of events through the school day. Data analysis included exploring the data both deductively and inductively, moving between the two in a recursive pattern (LeCompte & Schensul, 2013). During this process, codes and themes began to emerge (Glesne, 2011) and I wrote analytic memos to help organize the data (Miles & Huberman, 1994). I followed the verification processes of triangulating the rehearsal transcripts with interview transcripts and field notes, clarifying researcher bias, and conducting an external audit with two outside reviewers (Creswell, 1998).

Introducing the Key Informants

The intent of this instrumental case study was to discover how the context of the classroom might impact student flow in the large ensemble. To understand the context of the classroom beyond what was observable in rehearsals, the band teacher and four students served as key informants (Collins, 2010; Onwuegbuzie & Leech, 2007) to help provide insight and understanding of the ensemble in relation to the research questions. As discussed in Chapter Three, the teacher selected the student key informants based on his prior knowledge of the students within the criterion of selecting two males and two females. This section will introduce each of the key informants prior to describing a

typical day in eighth grade band, followed by a presentation of themes that emerged from the data. For the protection of each participant, and in keeping with good research practices, a pseudonym is used in place of his or her name. Interviews were conducted in the week prior to the final week of data collection.

Mr. Anderson. Mr. Anderson teaches sixth, seventh, and eighth grade bands at Harmony Middle School. He also teaches small group lessons to all the seventh and eighth grade students at Harmony; students receive a total of 12 lessons throughout the school year. In addition, he rehearses the jazz band and co-directs the district honor band with the band director from the other middle school in the district, which happens to be located directly across the street from Harmony Middle School. This is Mr. Anderson's tenth year of teaching; his first two years of teaching were at a private school in another part of the state. Mr. Anderson has a youthful look to his face, causing one to think at first glance that he is a novice teacher instead of having a decade of teaching under his belt. Compared to other male teachers I see at Harmony, Mr. Anderson's dress is clean-cut and professional. He often wears ironed button-down dress shirts, a tie, dress pants, and shined dress shoes. This doesn't change on school pride days (when teachers usually wear jeans and a sweatshirt with the school name): Mr. Anderson simply wore an Under Armour jacket with "Harmony Middle School Band" embroidered on the chest over his professional attire.

Anna. Anna is a flutist in the ensemble. Her shoulder-length light brown hair is either down or pulled back into a ponytail, depending on the day. On the day of her interview, her hair is down and she is dressed casually in a blue, half-zip pullover fleece,

black knee-length workout pants and tennis shoes. Anna often greets Mr. Anderson as she enters class and uses that time to ask any questions or share concerns rather than doing so during class. On one of my visits, Mr. Anderson jokingly said to her "Anna, you don't have a million questions for me today!" Anna then proceeded to ask about the date of his birthday, his wife's birthday, and a classmate who just entered the room's birthday (rehearsal, November 18, 2013). Her favorite classes are band and math.

Lily. Lily is the first chair trumpet player in eighth grade. Speaking with her, I learn that she plays in the district honor band, and is a dancer. She is the youngest in a family of four sisters – all of whom sing or play an instrument. Her mother is an elementary school music teacher in the district as well. Lily wears her long, brown hair down on most of my visits and is wearing a button-up blouse with a collar, a long grey sweater, and blue jeans for her interview. She comments on how she looks "horrible" to be videotaped for the interview before I reassure her that I will be the only one who sees the video, and the purpose is to listen to what she has to say. Lily's favorite classes are band and science. She attributes her affinity for science to both the subject matter and her teacher, who sparked an interest in biomimicry and kinesiology.

Steve. Steve is an alto saxophone player in the band. When we talk, he is wearing a grey t-shirt that has the words *Eat. Sleep. La Crosse.* in big letters across the front. Steve is the least talkative when compared to the other students in his interview, but he is friendly and polite to me during our conversation. He tells me that he is interested in history, but unlike Anna and Lily, he does not identify a favorite class. I learn during a band rehearsal that Steve started playing the baritone in sixth grade before

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switching to saxophone, and according to Mr. Anderson, he was "really good" (rehearsal, November 13, 2013). Steve does mention that it is hard to fit in practicing his saxophone during the week, but does not mention what other activities he does outside of school.

Malcolm. Malcolm started playing tenor saxophone in the sixth grade but switched over to bassoon at the encouragement of Mr. Anderson. He plays bassoon in the district honor band and continues to play tenor saxophone in jazz band. He feels that his private bassoon teacher, whom he sees once a week on Fridays, has helped him improve "exponentially." Malcolm has shaggy blond hair and wears grey track pants and a red zip-up sweatshirt on the day of his interview. He takes Tae Kwon Do classes three times a week. He has future aspirations to use technology to "make the world as a whole a better place" (Malcolm, personal communication, December 4, 2013).

A Typical Day in Eighth Grade Band at Harmony Middle School

The following section will present a narrative of a typical band rehearsal for the eighth grade band at Harmony Middle School. The purpose of this section is to create an opportunity for the reader to gain an understanding of the case through "thick description" (Stake, 1994, p. 39). Wolcott (2001) states that description provides "the firm foundation" for qualitative inquiry (p. 31). A narrative in the form of a band rehearsal provides a level of detail that gives the reader a sense of being in the room; Stake describes this experiential understanding as a "vicarious experience" (1994, p. 63) that helps the reader in making his or her own generalizations about a case (Bresler & Stake, 1992). The students I spoke with all described the structure and routines of the class similarly, which triangulated with my observations.

♪

At 1:10 p.m., the bell rings to signal the start of the passing period between sixth and seventh hour. Students slowly filter into the band suite, gathering their instruments and materials needed for class from their lockers before entering the band room. As they enter, Mr. Anderson has music playing over the speakers. I heard a variety of different styles of music during my visits: songs from musicals, arrangements of tunes for brass or percussion ensembles, and holiday music. The music is loud, causing the overall volume to escalate in the room as students visit with each other or begin to warm up on their instruments. A PowerPoint slide is projected on a screen that reminds students to 1. Tune their instruments and 2. Be in their seats by two minutes after the final bell rings. Concert A and Bb tuning pitches can be heard amongst the din, as students use their tuner applications on their cell phones or iPads to check their pitch. A tuner also sits at the front of the room that a few students stand in front of and use on their way to their seats. Lily comments to me how "you're supposed to tune" but "some people don't tune, which is later on evident" during class (Lily, personal communication, December 5, 2013).

"Two minutes," croons Mr. Anderson over the noise of students talking, tuning, and playing their instruments. He uses a hands-free microphone while teaching, which allows him to easily be heard over the din. He changes the PowerPoint slide on the screen to the day's list of activities and turns off the music. As the students settle in to their seats and class begins, a clarinet player remains standing at the front of the room. She holds a binder and a pencil and takes attendance in silence, marking students who are

tardy or absent onto a sheet of paper. When she is done, she quietly sets the binder onto

Mr. Anderson's oversized music stand and returns to her seat.

Instruction begins with a flurry of activities, listed as "Skill Builders" on the

projected PowerPoint slide. Students "sizzle" rhythms by saying them on a "ch" sound,

play scales or short exercises from their class books, clap rhythms, or sing intervals. Mr.

Anderson describes this portion as "many activities: one to the next, to the next, to the

next. But, all said and done adds up to sometimes 20 or 30 minutes" of the 50 minute

class period (Mr. Anderson, personal communication, December 5, 2013). Within each

individual activity during Skill Builders, Mr. Anderson usually gives pointed and

immediate feedback to the students based on what he hears them "sizzle," sing, clap, or

play on their instruments.

Today, students are working on a chorale. After "sizzling" through the chorale,

Mr. Anderson instructs students where to take breaths when they play the chorale on their

instruments. Then, he adds another layer of complexity by addressing dynamics: "Last

but not least, when notes go up try to crescendo. When notes go down, try to

decrescendo, just makes it a little more interesting. That's a lot, right? Let's see if we

can handle it. Here we go. Try it out." Mr. Anderson whistles an ascending pitch as he

raises his arms to conduct. The students play and stop after a fermata as a result of Mr.

Anderson's conducting gesture. He compliments the students quickly and instructs them

to continue with the chorale: "Good, going on. Big breath. Ready? Slightly faster, and."

The students play where they left off but are quickly stopped as Mr. Anderson hears a

rhythmic mistake: "Let's do that again. Let's do that again for rhythm." He sings the

melody with the correct rhythm and then gives two additional directives, one regarding

phrasing and one regarding tempo: "Go for the high note, ready? Beginning of that spot.

Slightly faster, two, three." The band plays again, but do not correct their rhythmic

mistake. Mr. Anderson hurriedly stops them: "Rhythm, rhythm, rhythm, rhythm. We're

missing the rhythm, guys. Let's do it again. Shh, you can do this; it's just a quarter note

and a half note. Measure ten. Just count. Ready?" After a few more attempts, the band

successfully plays the chorale. Mr. Anderson tells the students to prepare for the next

activity and students use this transition space to chat with each other (rehearsal,

November 6, 2013).

Rehearsing concert repertoire follows the Skill Builder activities. Anna, Steve,

and Lily commented to me that they enjoy this part of class because they like the concert

music. As they rehearse, Mr. Anderson may conduct large sections of music while

speaking into his hands-free microphone to provide corrective feedback or to remind

students about an upcoming challenge in the music. He may also choose to conduct

small sections of music, in which the students stop and listen to his feedback before

starting to play again. Today, he notices that a percussionist made an error on his snare

drum part in a medley of holiday music. Mr. Anderson stops the group, takes a few steps

towards an array of instruments he keeps at the front of the room, and grabs a snare drum

and a pair of drumsticks. Walking back to the podium with the snare drum, he instructs

the band to "sizzle" their parts so that he can isolate the snare drum part with the student,

Joe. As the band sizzles, Mr. Anderson and Joe play the part at the same time on their

snare drums. "Pretty good," says Mr. Anderson. Joe replies, "I went a little bit too fast."

"The beginning you were," acknowledges Mr. Anderson and he instructs all the students to play while he plays along with Joe. The students receive a compliment from Mr. Anderson: "Good, good, that was really good." A few minutes later, Mr. Anderson hears an issue with a pitch in the flute section: "Hm, sounds funny. I see your fingers in the right spot, but I don't hear the right sound." He sets down his drumsticks and picks up his flute. After some time playing pitches on their flutes, the section and Mr. Anderson determine that one student has her thumb pressed down on a key when it should be up, coupled with an intonation issue that is remedied by adjusting the flute headjoint. The error is fixed and rehearsal continues (rehearsal, November 13, 2013). Mr. Anderson rehearses two or three pieces each day before giving announcements in the last few minutes of class. The bell rings to signal the end of class, which is also the end of the school day; students file out of the room quickly and put their instruments away. Depending on the day of the week, the band suite might remain busy as students arrive for an after school jazz band rehearsal or may become quiet as a few students stay after school to practice in one of the four practice rooms.

Presentation of Themes

In order to understand the context in which the students at Harmony Middle School may experience flow, this research was guided by the question: In what ways does the culture of the ensemble impact student flow experiences? *Culture,* as used in this study and defined in Chapter One, is the norms, rules, traditions, and expectations of the ensemble and the patterns of interaction between members of the ensemble. Defining the case for this study as the eighth grade band (rather than a detailed case study of the

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teacher or a student, for example) allowed me to examine both the norms and values inherent in the ensemble setting and the patterns of interaction between teachers and students as well as students with each other. Davis (2006) argued that this "classroom interpersonal culture" varies from class to class, or in terms of instrumental music, ensemble to ensemble. Studying the culture of the eighth grade band aligns with the purpose of this mixed methods study, which is to examine factors that may impact a student's flow experience in middle school band. Three themes regarding this case emerged from careful and repeated reading and analysis of the data:

- teacher as culture bearer;
- competition; and
- the *solo* in the *tutti*, or the individual in the group.

The themes will be introduced in this section followed by a discussion of the flow dimensions found in the data.

Teacher as culture bearer. Morrison (2001), describes the school band director as a culture bearer, defined as "a senior practitioner who passes on accepted practices, values, and traditions to a younger generation" (p. 26). An examination of Mr. Anderson's actions and words provided insight into the values and beliefs that he infused into the eighth grade band at Harmony while serving as a culture bearer. Within this theme, the sub-themes of order, developing a disposition for band culture and the challenges associated with it, and shared acceptance by students will be explored.

Order. Mr. Anderson values order and managing people. He demonstrates planfulness in both his day-to-day and long-term curricular goals. Prior to the beginning

of the school year, Mr. Anderson compiled photocopied theory worksheets, sheet music, band lesson grading sheets, and music history lessons into a book that was bound at the school district's print shop. Each band student received their own book, called the Primer Pack, and they used it every day in band rehearsal. This breadth of planning prior to the school year starting is a physical manifestation of Mr. Anderson's sense of order**.**

There is such a well-established sense of order in the band room that an observer may not even consider classroom management to be an issue in this class. Mr. Anderson's routines and patterns of expected behavior were immediately noticeable on my first visit to Harmony Middle School. On the first day of data collection, I wrote the following in my field notes:

> I notice a number of things that Mr. Anderson has trained the students to do, probably since sixth grade. For example, *sizzle once if you can hear me…sizzle twice if you're ready*. At the end of class he tells the students to *stay on the carpet*, which means they cannot leave the band suite and go out to the main hallway. He tells them to straighten the music stands. The entire room has music stands straight up and down and pushed to the edge of each tier, so that the next class can walk between the chairs and [music] stands easier. I notice the percussionists know when to sit in the chairs that are set out for them in the fourth tier, which indicates they have learned the norms/expectations of the class. (field notes, November 4, 2013)

While straightening the music stands and having the percussionists sit in specific chairs signifies observable orderliness, the first example described in my field notes may be

interpreted as a classroom management strategy. Another classroom management

strategy that I observed often was Mr. Anderson's use of a whistle. If he wanted to get

students' attention, Mr. Anderson would blow a whistle that hung around his neck. Upon

hearing the whistle, students shouted the phrase "Horns up!" and awaited further

instructions. These two classroom management strategies were used swiftly when

needed and appeared to be seamlessly woven into Mr. Anderson's style of instruction.

They were not aggressive acts but certainly contributed to a sense of order in the

classroom.

 Developing dispositions. Eisner (2002) states that purpose of the arts classroom

is as much about developing a disposition as it is about developing skills. A band student

who leaves Harmony Middle School should be able to function independently while

contributing to the whole in a high school ensemble and beyond. In keeping with his role

as a culture bearer, Mr. Anderson believes that his students can develop the disposition,

or ways of thinking, of a mature musician while in middle school. Although there is a

written curriculum for band that was developed by Mr. Anderson and the other

instrumental music teachers in the district (Mr. Anderson, personal communication,

December 5, 2013), developing a musical disposition goes beyond the ability to

demonstrate a curricular objective, such as performing a Bb major scale. In his

interview, Mr. Anderson stated*:*

> we're just not training them to make music per se, but to do all the skills
>
> necessary to be a musician, which, um, we could say, 'yeah, you were a good

musician today, but you weren't a good band student. You weren't a good

member of the ensemble. (personal communication, December 5, 2013)

According to Mr. Anderson, a "good musician" is a student who can demonstrate the

outcome of a curricular objective, but a "good band student" is one who understands and

takes the necessary steps to be successful, responsible, and "professional acting"

(personal communication, December 5, 2013) – similar to a high school, college, or adult

ensemble musician.

An example of students acting professional in class was the tuning process that

occurred after the skill builder exercises and before rehearsing concert music. Although

students were expected to tune before class (and many did!), this activity happened

during every class that I observed. Similar to what an audience member might observe at

an honor band concert or professional orchestra concert, the "first chair" oboe player

carefully performed a series of pitches that the students sang and played back with the

intent of matching the pitch frequency as closely as possible. Most days, Mr. Anderson

would provide constructive feedback to sections or individual students if intonation did

not improve, stretching the length of the process. However, on one of the last rehearsals

before the concert, Mr. Anderson did not provide feedback and indicated that this would

be like how the students would tune at the concert. Earlier in my observations, Mr.

Anderson made the following comment regarding tuning:

That was pretty good today, but just a reminder, if it's not in tune by the end of

the second tuning note, what happens at the concert? Then we're just out of tune,

yeah, and the audience wonders why we went through that and never got better.

(rehearsal, November 13, 2013)

This tuning process was ritualistic in that it happened every day. It seemed there were two goals during the tuning "ritual." First, students learned how to listen, to match a reference pitch, and to make the necessary adjustments to their instruments in order to improve their intonation. Second, the students were being enculturated to behave similarly to a high school, college, or adult ensemble. The image of the solo oboe player rising from her chair to carefully provide the reference tuning pitch in a concert setting is a signal that the concert is about to begin. The tuning "ritual" is a visual exemplar to parents who attend a concert at Harmony Middle School that the students behave like professionals.

Because students start band at Harmony Middle School when they are in sixth grade, Mr. Anderson trains them in the band culture through structure and routine. The implication is that this training is necessary because middle school band students are not like high school band students; in high school band, according to Mr. Anderson, the "shared expectation is there about what we're trying to accomplish" (personal communication, December 5, 2013). Luckily for Mr. Anderson, he believes that middle school students "don't come with a lot of bias yet; they're just 'this is what we do,' you know, and that's kind of their attitude about if you train them that way, that this is how it's going to go" (personal communication, December 5, 2013). By the time students are in eighth grade, Mr. Anderson told me that the routines are "pretty burned in after about a week," meaning that as students grow through the band program, it takes less time at the

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start of the school year for the routines and expectations to be reviewed from the previous year and assimilated. Similar to a transmission model of teaching, where students' minds are viewed as empty vessels waiting to be filled with knowledge, students who start band at Harmony Middle School can be assimilated into the beliefs, norms, and values of band.

Navigating challenges as culture bearer. Mr. Anderson faces challenges in passing on band culture and has devised antidotes to counteract these challenges. First, students choose to enroll in band class at Harmony Middle School as an elective; therefore, students have the choice to not enroll in band class in the future. Second, Mr. Anderson feels that there is a long period of time that passes before students recognize the value of participating in band for themselves. As a result, Mr. Anderson stated that "every single day is a sales pitch:" "I feel like as a band director, we have that – as an elective class – we have that responsibility more so than other subjects to not entertain them, but make it seem worthwhile to them, every day" (personal communication, December 5, 2013).

I observed a number of symbolic representations of Harmony Middle School band culture. Panoramic photos of the district honor band from previous years hung in the band room. These photos were framed and pictured the students on stage dressed in their concert attire of black pants or skirts and white shirts. A marching band parade banner for the school district, still hanging on the pole that students would use to carry it, was displayed in the band room as well. Mr. Anderson also adopted a tradition from Notre Dame's football team: near the exit doors of the band suite hung a small sign with the statement, "Play Like a Champion Today." He encourages students to hit the sign when

they leave band similar to the Notre Dame tradition of football players hitting a similar sign on their way out to the field on game day (Reilly, 2012). In addition, Mr. Anderson makes use of a Twitter feed to share information and celebrate successes of current and former band students.

The development of extra-curricular opportunities for high achieving students helps illustrate the value of participating in the band program. These opportunities included a jazz band and a district honor band that students had to audition for in order to gain entry. Although jazz bands as an extra-curricular activity has a history in school band programs (Allsup, 2012), the district honor band is not as common. Mr. Anderson described the reasoning behind developing the district honor band:

> We noticed after when I was here about a year…[that] we're losing the wrong kids, and it was the kids who were really doing well but got bored by the level of music or the maturity of their peers. And so, we started that honor band, I think like my second year in the district here, and that's really, really helped. (personal communication, December 5, 2013)

In the context of this statement, the "wrong kids" were high achieving students who were not being challenged in class. However, it may be that these students assimilated into the band culture sooner than their peers, as suggested by the fact that Mr. Anderson felt they were bored by the lack of maturity of their peers. He explained further: [honor band students] "see the light at the end of the tunnel, sort of like, 'if I just keep plugging along, I'll eventually be in a group where I'm surrounded by these kind of people all the time'" (personal communication, December 5, 2013). In this sense, "these kind of people" are

those who accept the culture and comply with the norms. Lily spoke of the unity between her and her peers in the district honor band in that they were "band geeks" (personal communication, December 5, 2013) – a common term used in the band culture as a symbol of pride. Mr. Anderson described how the positive attitude of district honor band students permeates back into the curricular band class.

Shared acceptance by students. Shared acceptance by students is one of the results of Mr. Anderson's actions as culture bearer in this setting. Mr. Anderson has been teaching at Harmony for nearly a decade, therefore his routines, structures, and rituals seemed to be shared knowledge by both the current students and previous students. Both Anna and Lily attributed a part of their shared knowledge about the culture of band to their siblings who had been in band in previous years. Anna described how her older brother "challenged" his way to a higher ranked chair when he was in middle school – and how she was considering doing the same. Lily described that she knew where everyone was supposed to sit on the first day of band in sixth grade based on what instrument they play because her older sisters had taught her from their own experiences with band at Harmony Middle School. These two examples suggest that the students were aware of Mr. Anderson's procedures due to his longevity teaching at the school.

Anna, Lily, Malcolm, and Steve all expressed that they would like to continue playing their instruments beyond eighth grade band when asked, "What are you looking forward to in band?" Malcolm and Steve both stated that they are looking forward to improving on their instruments so that they can play more challenging music. Steve stated:

I've always thought it'd be cool once you were really good at playing an

instrument, you could kind of just learn different songs…go to the store, buy

pieces of different songs that would be challenging. I'm looking forward to

getting better and then maybe it'll be easier to play different pieces. (personal

communication, December 4, 2013)

Malcolm would like to play in a community youth orchestra. Both Anna and Lily shared

parts of high school band they were looking forward to: Anna wanted to play the "fun"

(personal communication, December 5, 2013) music that is associated with marching or

pep band and Lily planned to audition for the advanced wind ensemble at the high school

as an incoming freshman. The desire to continue playing their instruments after middle

school demonstrates that these students made a choice to extend their musical training

beyond the elective class of eighth grade band and perhaps that they shared an acceptance

of Mr. Anderson's vision of ensemble culture.

Although it was not possible to know the extent by which all students accepted

the band culture established by Mr. Anderson, it appeared that there was a high level of

acceptance as reported in field notes and observations. I observed a particularly

compelling example in rehearsal one day, following a lengthy segment of instruction

about expressive playing, when two students shared their opinion regarding their teachers

at Harmony Middle School. Mr. Anderson had projected a PowerPoint slide with 12

guidelines for expressive playing; the guidelines included statements such as: "any note

longer than one beat deserves a dynamic change." After discussing the guidelines and

practicing them in the context of rehearsing a chorale, Mr. Anderson adamantly told the

students to exert more effort in order to be successful at playing expressively. As students transitioned to the next activity, Mr. Anderson conveyed to me how it is difficult to teach students to play expressively in addition to simply playing the correct pitches and rhythms. Overhearing this conversation, a student named Kevin stated: "We only want to do half the things the teachers teach us." Kevin admitted that he and has classmates may not always choose to follow a teacher's instruction even though they may be cognitively and physically able to do so. A second student chimed in: "We do more things when you [Mr. Anderson] tell us to do them" when compared to the other teachers at school (rehearsal, November 13, 2013). This brief, but telling, exchange between the students and Mr. Anderson revealed that students may indeed recognize the value in participating in band because they may be willing to work harder for Mr. Anderson than their other teachers.

Mr. Anderson's role as the teacher in this ensemble went beyond teaching the district's music curriculum. Through his actions and instruction, Mr. Anderson passed on his own beliefs and assumptions about being a member of an ensemble. He recognized the challenges of creating a band culture with young adolescents, as they only began playing their instruments in sixth grade, but recognized that this culture becomes more established with years of participation. According to Schein (2004), it is the leader of a group who initiates the creation of a culture "by imposing his or her beliefs, values, and assumptions at the outset" (p. 225). Mr. Anderson, as the teacher, worked at creating a band culture that began each school year with a new group of sixth grade students. Mr.

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Anderson's beliefs and values gradually became shared assumptions by the students

through his teaching and leadership (Schein).

Competition. A feeling of competition was present throughout my observations

at Harmony Middle School as students were encouraged to perform better than one

another in class, to compete against a set standard, and to compete against the other

eighth grade band. As previously mentioned by Anna's description of her brother

"challenging" for a higher ranked chair, the Harmony Middle School band program did

include ranking the students based on an audition score so that they sat in an order from

highest to lowest. This process of seating students in a ranked order is common in

ensembles (e.g., Scheib, 2006). Within this structural hierarchy of chair placements, Mr.

Anderson encouraged students to compete within themselves to a set standard. For

example, Mr. Anderson used checklists as a motivator so that students could become self

"score keepers" (personal communication, December 5, 2013) for a variety of goals,

including meeting lesson criteria and completing *SmartMusic* assignments. He

established a sense of friendly competition in and among students in class for short-term

performance goals.

While the examples in the previous paragraph may be present in other large

ensembles, the eighth grade band students at Harmony were often in a competitive rivalry

with the other eighth grade band that met earlier in the day. I noticed this immediately by

a check mark system drawn on the white board at the front of the classroom. On the

white board, all the band classes had a series of blank, hand-drawn boxes with each

concert piece listed at the top of each box. When the class was able to perform a piece of

concert music at a level Mr. Anderson deemed to be acceptable, he put a check mark in the box. Because the check mark chart on the white board was visible to all the band classes at Harmony Middle School, the students compared their progress to the other eighth grade band because they were playing the same repertoire. During one rehearsal, students earned a check mark and one student noted: "We're beating second hour [eighth grade band]" (rehearsal, November 5, 2013).

Mr. Anderson seemed to encourage this competitive rivalry between the classes and would often compare the progress through the Skill Builders and concert music to the other eighth grade band that met earlier in the day, which was often met with cheers if the band somehow performed better than the other band, or scoffs if the opposite occurred. One day, my presence was a form of evidence that the students' performance was not equal to the other eighth grade band:

Mr. Anderson: Notice that we're a little behind the other group [of eighth grade students].

Student: No we're not.

Mr. Anderson: No you are, actually, because they had this [check] mark yesterday….

Student: Yeah, but we have more checks overall.

Mr. Anderson: I'm just stating the facts. They are ahead of you on this tune. If you don't believe me, you can ask Ms. Clementson. She will verify that second hour got a little more work done on that tune than we did. (rehearsal, November 6, 2013)

Comparative comments such as these occurred often during my visits at Harmony Middle School.

The class seemed to be unified in the desire to perform better than the other eighth grade band, even though the two classes combined into one ensemble for concerts. This competition seemed to peak close to the winter concert on my last day of observation. Earlier in the week, students were placed in small groups and were instructed to write a paragraph to describe a piece of concert music. These paragraphs were to be read by students at the concert. Both of the eighth grade bands did this assignment and, since they were playing the same concert music, there were two sets of descriptive paragraphs for each piece. Mr. Anderson allowed each band to vote by ballot as to which descriptions should be read at the concert. Each option was read aloud and projected onto a PowerPoint slide in class. When Mr. Anderson instructed the students to vote for the best written description, not just the one from their friends in class, Steve stated his disdain for the other band:

> Steve: Our burning hatred for second hour [eighth grade band].
>
> Student 1: We don't have a burning hatred.
>
> Student 2: We have a burning hatred.
>
> Mr. Anderson: When the bands are on stage [at the concert], nobody knows the difference….All right? There's only going to be one band on stage. (rehearsal, December 11, 2013)

Mr. Anderson seemed to contradict his previous comparative statements in this moment, explaining that the two band classes had the same goal: perform as a unified group at the

concert. This dissonance between an ongoing rivalry and an overarching sense of having all Harmony Middle School band students as part of one culture is an interesting juxtaposition.

The *solo* in the *tutti*, or the individual in the group. Allsup (2012) argued, "band brings together a cross-section of the student body, a collective of young individuals each of whom are charged in the cocreation of a larger musical goal" (p. 179). Within this collective of young individuals, teachers should be aware of the individual needs of the students in their classrooms (Mertens, et al., 2007). From an organizational theory perspective, it is important to "honor both the group and the individual in the sense that neither makes sense without the other" (Schein, 2004, p. 181). Similar to a soloist, whose musical phrase comes to the fore briefly before retreating back into the ensemble, students at Harmony Middle School demonstrated individual variations in intellectual and social development within the context of the ensemble.

Students in the eighth grade band demonstrated differences in their cognitive processing and their ability to verbalize their cognitive processes, both in class and in interviews. For example, Anna and Lily both stated they "loved" band, however their reasoning process differed. Anna simply loved band because, as she stated, "I love playing flute and I love the music that we're doing" (personal communication, December 5, 2013). In contrast, Lily reasoned her love for band was based on her skills as a musician, her opportunities for leadership as the top trumpet player in the eighth grade, and her ability to make connections and relate new music to previously learned skills.

In rehearsals, students were quick to make judgments about the activities they did.

An example of this occurred on the day Mr. Anderson introduced sight singing as a new

Skill Builder activity. The students sung notated intervals by rote, copying Mr.

Anderson's example. Next, Mr. Anderson projected a four measure melody on the screen

at the front of the room for students to sing. I wrote down the following reactions in my

field notes:

> Student 1: I don't like it.
>
> Student 2: This is easy.
>
> Student 3: This is hard. (field notes, November 18, 2013)

Although these students quickly made snap judgments about sight singing, I noticed on

subsequent visits that the students seemed to enjoy, or at least tolerate, this new Skill

Builder. Their singing improved each time I observed this activity and their verbal

opinions decreased. I paraphrased a conversation with Mr. Anderson regarding this in

my field notes: "middle school students equate easy with fun. And that when they finish

something, such as playing an exercise or piece of music, then in their minds it is "done"

(field notes, November 13, 2013). The comment about equating easy with fun may be a

generalization that does not hold true for all students in the ensemble. Malcolm, as one

example, seemed to understand the fun of performing with others at a high level. He

stated:

> In band you have to collaborate a lot more than you do in any other class, because
>
> as a band you have to never think of yourself, you have to think of how, not how
>
> do I sound, [but] how do I sound in comparison to the rest of the band? Like, for

example, if I have a really high part am I going to play on a flute really loud when the bass part has its own little solo-type thing? And then I'd cover everyone up and you don't want to do that. You're going to have to think: I'm going to have to back off here, because I have a whole note and it just goes daaaaaaa. (personal communication, December 4, 2013)

This statement reveals how Malcolm processes his experience in band.

There were opportunities for students to get their social needs met in class. Many of the students actively socialized with each other before, during, and after class. Some students were assigned to sit near each other, making their socializing more subdued. Some students, like friends Malcolm (a bassoon player) and Kevin (a percussionist), had to talk loudly to communicate in class since they were farther away from each other. Students often joked with each other during class as a form of socialization. Of the students with whom I spoke, only Lily articulated how the social aspect of school and music making intertwined to create a positive experience in band. She valued the time spent visiting before class, as, according to her, many students did not see each other during the day in their other classes. She valued her relationships in the district honor band, stating that some of her favorite memories from the previous year were playing music with her friends - who are now freshmen in high school - in district honor band.

Teacher support plays a role in how students' developmental needs are met in school (Davis, 2006; Goodenow, 1993; Wang & Holcombe, 2010). Mr. Anderson was aware of the instructional supports he had in place to help students succeed. He stated:

> You have to be really engaging all the time and have activities that pertain to them and they need to understand why they're doing it [the activity]. So, I try to always tell them, you know, we're doing this because…. (personal communication, December 5, 2013)

Mr. Anderson felt that being transparent by providing a rationale was helpful when working with middle school students. This expressed opinion echoes Shernoff's (2013) statement that telling students about the value of an activity can increase persistence and performance. Mr. Anderson also expressed how he was willing to adapt his instruction if students struggle in class with learning a new skill or concept. In class, he combined demands for better behavior and performance with encouragement.

Four months after data collection was over, Mr. Anderson shared the following post on his personal social media page:

> I was very proud of the bands at Harmony Middle School, who worked very hard after a week of Spring Break. I never know how they'll be when "out of the routine" but they surprised me with a great work ethic this week. Highlights: hearing Leroy Anderson's "Trumpeter's Lullaby" accompaniment come together in 8th grade, with a phenomenal trumpet soloist in the works! She [Lily] has literally not missed a single note, has tons of courage, and is playing with finesse, style, expressive tempo changes where necessary, and soloistic beauty. Other highlights include 8 brave, hard-working students who volunteered to play their solos with *SmartMusic* accompaniment in front of the class, demonstrating their preparation. (personal communication, April 5, 2014)

This statement by Mr. Anderson shows how he honors both the individual and the group, as recommended by Schein (2004).

   Summary of themes. Three themes emerged from the data regarding this eighth grade ensemble. First, the teacher played a strong role in introducing students into a band culture (Morrison, 2001) that included curricular goals, musical performance, and non-musical behaviors expected of and appropriate for a large ensemble. Second, both friendly competition and fierce rivalry was present in the eighth grade band. Third, the students exhibited a range of developmental behaviors in class of which the teacher had instructional strategies in place to support the students. An understanding of the culture of this particular ensemble was essential in order to identify contextual and environmental characteristics that may impact students' experience of flow. The next section will describe the dimensions of flow that were found in the qualitative data followed by an answering of the qualitative research questions.

Flow Dimensions

   As summarized in Chapter Three, I examined the literature regarding the nine flow dimensions (Csikszentmihalyi, 1990) in order to determine if I could extract examples of flow from the data. The nine flow dimensions are: balance between challenge and skill, merging of action and awareness, clear goals, unambiguous feedback, deep concentration, sense of control, loss of self-consciousness, the transformation of time, and intrinsic motivation. Four of these dimensions were found in the qualitative data to be worthy of exploration, either because of their presence or absence: balance between challenge and skill, unambiguous feedback, the transformation of time, and

intrinsic motivation (also referred to as autotelic personalities). Each dimension, as it relates to the data, will be explored in this section.

Balance between challenge and skill. Activities that are said to promote flow experiences allow for skill acquisition and subsequent growth as easier skills are perfected. In order for this to occur, challenges must increase so that the person does not become bored repeating the same skill over and over. In this sense, music for concert bands is composed for different grade levels and method books often follow a sequence of progressively harder exercises so that students can develop skills. The music performed by the eighth grade band required different skills than the music performed by sixth grade bands, for example. The tasks that students were required to demonstrate in their lessons and the *SmartMusic* assignments that students recorded and turned in for assessments also followed a sequence of increased knowledge and skill acquisition. Mr. Anderson recognized, however, that this sequence in complexity was not developmentally appropriate for all students at all times. Regarding small group lessons, Mr. Anderson told me that he "knows that what he is teaching is too easy for some and too hard for others" (field notes, November 5, 2013). The creation of the district honor band was an opportunity to create a more developmentally appropriate musical environment for students who were bored in class. The district honor band provided higher levels of music to more skilled musicians – thus perhaps allowing students more opportunity to balance the level of challenge with their skills.

Even if the sequence of complexity and skill acquisition happened to be developmentally appropriate for an individual during my visits, at no time did a student

mention feeling challenged yet confident in their ability to meet that challenge. Lily

described that getting new music to play is challenging at first until she is able to "take a

step back," examine the form and relate the material back to what she already knows.

While this may indicate that she is aware that her skills are at a level that help her

overcome a potential challenge, she concluded this dialogue by stating that "nothing is

challenging" for her in band (personal communication, December 5, 2013). Perhaps Lily

did not feel comfortable recognizing a challenge because of her status as the first chair

trumpet player.

Lily, however, did reveal a change in her skill level during class. One day, the

eighth graders were sight reading an arrangement of *Simple Gifts* (arr. Higgins, 2000) that

they had previously played a year earlier as seventh graders. The intent of this

experience was to prepare them for a joint concert with the seventh grade bands in which

both grades would play this piece together. As they finished, Mr. Anderson commented:

> Mr. Anderson: Whoo! You guys sound so much better on *Simple Gifts* than you
>
> did a year ago.
>
> Lily: God. I remember I was so scared of that [pitch] F, so scared of that F.
>
> Mr. Anderson: All right, good.
>
> Lily: I couldn't play it last year, now I could.
>
> Mr. Anderson: I know, because you're older and better. (rehearsal, December 10,
>
> 2013)

Lily experienced an imbalance between challenge and skill as a seventh grade student

that she was now able to accomplish as an eighth grade student. Although she most

likely had played many "F's" since seventh grade without any trouble, this return to *Simple Gifts* in eighth grade caused this strong reaction by Lily during class.

Despite this lack of awareness by the students regarding challenge, Mr. Anderson did promote a sense of friendly competition during class to motivate students. Csikszentmihalyi states that "competition is a quick way of developing complexity" (1990, p. 50), can be enjoyable, and can promote a balance between challenge and skill. Treating a task as a game, with rules and goals, creates a sense of competition with oneself or with others. Game-like statements were present in Mr. Anderson's teaching, as he told students to keep their heads "in the game" (rehearsal, November 13, 2013), would treat exercises like games or contests, and would jokingly refer to mistakes as "ten yard penalties" (rehearsal, December 10, 2013).

Unambiguous feedback. The flow dimension of unambiguous feedback goes beyond a direction to repeat a section of music or a compliment from Mr. Anderson. The students must be aware of and understand what constitutes a satisfactory performance instead of simply waiting for Mr. Anderson to give the next instruction. At times, Mr. Anderson included specific feedback into the cycles of instruction, as in this response after the students played a warm up exercise:

> Mr. Anderson: Good, take ten seconds, and any note you may have inadvertently missed [or performed incorrectly], just put a little reminder in with your pencil. Particularly in the second and third line [of music], I heard a couple of people miss a Db or Eb. All right, if you nailed it last time, then this time just be a little bit better at articulation – shorts and longs. (rehearsal, December 11, 2013)

In this example, Mr. Anderson heard students play incorrect pitches and unclear articulation patterns. The feedback that he gave was an immediate result of the students' performance; his directions gave clear instructions to the group for improvement.

The students I interviewed expressed an awareness of not meeting performance goals and not needing to rely on their teacher for feedback. Anna, Steve, and Malcolm all stated that Mr. Anderson did not give them individual feedback during class but would give feedback to their section or the whole band. In turn, all three students shared how they knew when they made mistakes and either made an internal comment to themselves or made a mark on their music to remind them to not make the same error during a repeat performance. In contrast, Lily felt that Mr. Anderson did give her feedback, especially when she had a solo part in the ensemble. Lily also described how she recorded herself playing when she practiced, listened to her recording, and engaged in self-critique so she could improve. All four students understood the goals of performing music as part of the ensemble and didn't need to rely on Mr. Anderson to tell them if they made an error.

Anna and Steve both described how members of their sections (flute and alto saxophone, respectively) would help each other in providing feedback during class. According to Anna and Steve, if a person in their section heard a wrong pitch or a wrong rhythm, they would gently point it out to each other to improve the section's performance overall. I, however, did not observe this during rehearsals and this type of friendly assistance, or teamwork, among students in largely absent from the data. There was one occasion where the trumpet section did help each other with a fingering, but only after they were prompted to do so by Mr. Anderson:

Mr. Anderson: Ok, take your pencil. If you missed the high A trumpets, I highly

encourage you to write in the fingering, quick. If you don't know what it is, ask

Julie, she'll tell you.

Student 1: It's 2, 3, right?

Student 2: No, 1, 2.[7] (rehearsal, November 18, 2013)

After playing the exercise again, Mr. Anderson complimented the trumpet section

because they played the correct pitch, "A." While there is no way to know whether or

not the trumpets would have corrected the mistake on their own, either individually or as

a section, this example shows that the eighth grade students were not actively engaged in

helping each other unless prompted.

Transformation of time. When experiencing flow, Csikszentmihalyi states: "the

sense of time bears little relation to the passage of time as measured by the absolute

convention of the clock" (1990, p. 66). During the interviews, all four students expressed

that time did seem to transform for them during band class. Anna, Steve, and Lily stated

that time passed quicker during the second part of class when compared to the first part of

class; this was when the students rehearsed the concert music rather than being engaged

in skill builder activities. Unlike Steve, Anna and Lily both commented that, in general,

band class flies by when compared to other classes at school. Malcolm, in contrast,

described time as slowing down. He stated that playing an instrument requires a large

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[7] The numbers 1, 2, and 3 correspond to valves on the trumpet. Different combinations
of valves, along with embouchure formation and air support create pitches. In this
example, Student 1 asks if the combination of the second and third valve pressed at the
same time create the pitch A and Student 2 correctly states that the combination of the
first and second valve pressed together create the pitch A.

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amount of conscious and unconscious focus. He summarized: "they say time flies when

you're having fun but I think that it should be time flies when you're having fun except

when you're playing an instrument. Because you can have fun on an instrument and it'll

take awhile" (personal communication, December 4, 2013). This echoes

Csikszentmihalyi's (1990) example of a ballet dancer who described "how a difficult turn

that takes less than a second in real time stretches out for what seems like minutes" (p.

66) because of the level of physical awareness and mental concentration required.

      Intrinsic motivation. The ability to be intrinsically rewarded by completing a

task for its own sake – in this case, performing music – did not seem to be an easy feat

for the students. On more than one occasion, Mr. Anderson expressed to me how

intrinsic motivation was difficult for middle school students. This was evident in his use

of checklists, game-like goals, and competition to help motivate his students. One day,

he decided to have the students compete for a candy prize by seeing which row of

students could play a major scale the best. When he did this earlier in the day with

another band, I wrote this in my field notes: "Mr. A[nderson] said something to the effect

of 'I'm all about intrinsic motivation, but sometimes you need to go Pavlovian. Not all

kids have intrinsic motivation'" (field notes, November 13, 2013). Going "Pavlovian"

meant rewarding the students for exhibiting the desired behavior of playing a major scale

well. Mr. Anderson also noted how students come to the end of a piece of music and

immediately want to move on to the next piece of music; however Mr. Anderson would

like to students to "want to learn" (personal communication, December 5, 2013) or to

have a continuous desire to improve as musicians. A glimpse of intrinsic motivation was

seen during Malcolm's interview. Malcolm described that there was never an arrival

point to being a good musician – thus echoing Mr. Anderson's sentiment of wanting his

students to have the desire to continuously improve.

Csikszentmihalyi (1990) notes that this lack of intrinsic motivation may be

attributed to age and time spent playing an instrument:

> Often children – and adults – need external incentives to take the first steps in an
>
> activity that requires a difficult restructuring of attention. Most enjoyable
>
> activities are not natural; they demand an effort that initially one is reluctant to
>
> make. But once the interaction starts to provide feedback to the person's skills, it
>
> usually begins to be intrinsically rewarding. (p. 68)

Mr. Anderson's curricular goal to develop musicians who can demonstrate learned skills

may require him to externally reward students, at first, as they learn to restructure their

focus and attention to the difficult tasks of learning to play an instrument and reading

notated music. This difficultly that lies within learning to play an instrument may lend

weight to Mr. Anderson's belief that "every single day is a sales pitch" in band class, as

described earlier.

Summary of flow dimensions. Four of the nine flow dimensions were revealed

in the data: the balance between challenge and skill, unambiguous feedback, the

transformation of time, and intrinsic motivation. Presence of these dimensions did not

indicate that all students experienced them consistently during class, however. The

teacher commented that, given the resources available to him, it was difficult to truly

differentiate instruction for each student. In turn, this made it difficult for students to all

feel challenged at a level that would match their current skills. Intrinsic motivation was
also difficult to observe in the actions and statements made by Mr. Anderson and the
students, although this may be an indicator of age and experience. Of the four
dimensions, only the transformation of time was something that all four students could
speak to during their interviews, however there was also a sense that students were
beginning to monitor and adjust their own learning when practicing or performing, thus
indicating the dimension of unambiguous feedback. The next section will review and
discuss the findings for the qualitative research questions.

Revisiting the Qualitative Research Questions

In this section I will review and discuss the findings from the qualitative strand of
this study by connecting them to the research questions. The main research question that
guided the qualitative study was: In what ways does the culture of the ensemble impact
student flow experiences? I will begin by answering the two sub-questions and then
return to the guiding question.

**In what ways do the nine dimensions of flow manifest themselves in the
students' descriptions of middle school band?** As previously discussed, four of the
nine dimensions of flow were extracted from the data by either their presence or
perceived absence: balance between challenge and skill, unambiguous feedback,
transformation of time, and intrinsic motivation. Of these, only the dimensions relating
to unambiguous feedback and the transformation of time came through in the students'
descriptions of band and will be described in the following paragraphs. In contrast, the
flow dimensions relating to the balance between challenge and skill and intrinsic

motivation were present in the data when examining Mr. Anderson's interview

statements, rehearsal transcripts, and field notes.

   Transformation of time.   All four students described a transformation of time

during band class, as described earlier. Malcolm felt that time seemed to slow down

because of the conscious and unconscious focus required to play the bassoon and to play

as part of an ensemble. Steve, Lily, and Anna mentioned that time seemed to speed up

when playing and rehearsing the concert repertoire, as in these examples***:***

> Steve: I feel like that [time transformation] happens every once in a while, it'll
>
> just fly by fast, I don't really think about it. (personal communication, December
>
> 4, 2013)
>
> Lily: Once we start playing our band pieces, especially ones that I like, I'm
>
> always like: 'wait, where did the time go?' and it's already time to go and I'm
>
> like: 'I haven't played it yet,' and you want to play one more time, or hear a
>
> certain part again. (personal communication, December 5, 2013)
>
> Anna (describing both band and math class): they just both go by super fast
>
> because, I think it's because I like them so much. (personal communication,
>
> December 5, 2013)

Enjoyment was a common thread through these responses, as time speeding up seemed to

occur when something was fun.

   Unambiguous feedback.   The flow dimension of unambiguous feedback appeared

in the students' descriptions of band. Students were cognizant of mistakes they made or

improvements they could make when playing in class. Steve and Anna described that they might play or note or rhythm incorrectly during class. Anna elaborated:

> I know I'm doing a good job if I mark the notes or breath marks or rests when I get them wrong because then I know that I can fix it. And then I don't feel, like, as bad as I do if I don't mark it and then I'm like, oh no, I'm not going to get better. (personal communication, December 5, 2013)

This sense of personal responsibility was also present in Malcolm's description of feedback. He was aware of many elements in a performance that may need improvement, such as tone, dynamics, pitch accuracy, rhythm, or intonation. Malcolm stated that, in regards to these elements of music, "you have to know what you want to hear and you have to know how to match that" (personal communication, December 4, 2013). He suggested that if a student lacked the skill to meet their expectations of what they wanted to play, that student could take private lessons or see Mr. Anderson for extra help. Lily mentioned a more nuanced form of self-feedback. She shared, "I sometimes record myself and play it back and if its, like, out of tune or I notice it could be, oh, a little bit more crescendo there or something" (personal communication, December 5, 2013).

Common to all of the data regarding descriptions of feedback was the fact that the students articulated ways that they might evaluate their performance in band. Activities that promote flow have rules or goals. Csikszentmihalyi (1990) acknowledged that some creative activities do not have clear goals so that "a person must develop a strong personal sense of what she intends to do" (p. 55). The students revealed their developing

"personal sense" of what goals or rules exist in performance. Students had an understanding of the "rules" of how to read music and how to play their instruments and they understood when they missed following a "rule," such as playing a wrong note. This awareness was in the form of an informal self-critique during class or, in Lily's example, a more formalized act of self-critiquing a recording.

Flow dimensions not present in the data.

There were five flow dimensions that did not appear in either the students' descriptive statements or in the other forms of collected data: clear goals, merging of action and awareness, deep concentration, sense of control, and loss of self-consciousness. At first glance, the flow dimension relating to clear goals seemed to be abundant the data. Students were required to turn in recorded SmartMusic assignments, to report the number of minutes they spent practicing at home, or to write a short reflection statement for their small group lessons. Students were also expected to practice their lesson assignments and concert music at home. In class, Mr. Anderson sometimes provided specific feedback about a missed note or rhythm and had the students practice the music again to correct the error. Despite these examples, none of the students described goals or goal setting as a means to a more enjoyable performance or overall experience in band. It seems possible to make a distinction between expectations, such as students submitting a SmartMusic assignment and personal goals directly related to performance. As mentioned earlier, students did appear to be developing their own personal sense of goals through their descriptions about self-

feedback and evaluation, however, these data were not compelling enough stand on their own as a flow dimension of clear goals.

In flow theory, when a person is completely absorbed in their chosen activity, she concentrates deeply and invests her energy into that activity. Her attention is focused on what her body and mind are doing while at the same time enjoying what her body and mind are doing. A person in flow is not thinking of other issues or problems outside of the activity. This example describes the flow dimensions of deep concentration, loss of self-consciousness, and the merging of action and awareness. In this study, only Malcolm described the conscious focus that is required in playing an instrument. Lily, Anna, and Steve did not describe how their minds concentrated or how their bodies physically moved to create an enjoyable musical experience. They also did not describe a state of total absorption. Finally, these "key informant" students did not describe a sense of being in control of the activity. Therefore, based on student descriptions, the flow dimensions of clear goals, merging of action and awareness, deep concentration, sense of control, and loss of self-conscious were not present in the data.

Does the developmental level of the young adolescent inform their descriptions of flow in the middle school band? Although Csikszentmihalyi (1990) claims that people of all ages experience flow, it was difficult to ascertain whether or not flow was occurring at Harmony Middle School based on student descriptions. When analyzing and coding data, it appeared that many of the flow dimensions were absent, as reported in the previous section. This may be attributable to young adolescent

development, as demonstrated by the individual variations in the students' actions and expressed thoughts.

Yair (2000) posited that the young adolescent mind is a "battlefield" in that middle school students are easily distracted by a number of internal thoughts and external issues. One issue may include feeling self-conscious, like when Lily made the statement that she looked "horrible" on the day she was interviewed (personal communication, December 5, 2013). Another issue may include the fact that young adolescents are navigating friendships and peer relationships while in the process of forming their own identities (e.g., Bishop & Pflaum, 2005; Hargreaves et al., 1996). These issues may hinder a young adolescent from experiencing all nine dimensions of flow, such as deep concentration and loss of self-consciousness.

The literature also suggests that young adolescents are beginning to engage in meta-cognition (e.g., Lounsbury & Clark, 1990; Mertens et al., 2007). Anna, Lily, Malcolm, and Steve spoke of ways they might evaluate or improve their performance in band, thus demonstrating an emerging personal sense of intention (Csikszentmihalyi, 1990). In the narrative about eighth grade band at Harmony Middle School, presented earlier in this chapter, percussionist Joe stated that he played his snare drum part "a little bit too fast" (rehearsal, November 13, 2013), demonstrating that he understood his performance error.

However, as described earlier in the theme, *the* solo *in the* tutti, *or the individual in the group,* the students displayed individual variations in their intellectual development through their actions and expressed thoughts. For example, students quickly verbalized

their reactions to the new sight singing activity as being easy, hard, or not enjoyable. Also, the interview responses from the "key informant" students ranged from simple (e.g., Anna's comment about loving band because she loves playing flute) to complex (e.g., Malcolm's description about collaborating with others while performing by adjusting his dynamics for balance). Lounsbury and Clark (1990) support these examples from the data with the following statement: "it is not necessarily true that these skills are well-honed and demonstrated with a great deal of mental finesse" (p. 8) by young adolescents. In other words, it may be possible that students were experiencing moments of flow, but were not able to articulate those feelings to me on the day they were interviewed.

In what ways does the culture of the ensemble impact student flow experiences? Eisner (2002) states:

> in the biological sense, cultures are used to grow organisms. In schools, the culture is used to 'grow children,' and the pace and direction of growth are influenced by the features of the environment in and through which they live. Thus, a comprehensive understanding of what students learn in school requires considerably more than attention to curriculum and teaching practices. It also requires attention to the hidden messages, values, and ideas that are conveyed tacitly if not explicitly by fellow students and teachers in the classrooms in which students spend so much time. (p. 158)

An inquiry into the features of the environment of Mr. Anderson's eighth grade band showed that students' learning went beyond the music curriculum. In this class, students

were in the process of becoming enculturated into a band culture through the values and beliefs that were expressed both explicitly and tacitly. Although Mr. Anderson played a key role as a culture bearer, organization theory suggests, "culture is the result of a complex group learning process that is only partially influenced by leader behavior" (Schein, 2004, p. 11). Each individual student brought his or her own experiences to the band culture of this particular case, such as Lily and Anna's prior knowledge or Malcolm's mature perspective on playing in an ensemble. Also, this band could be characterized by their humorous interactions, friendships, rivalry with the other eighth grade band, and orderly routines, or what Davis (2006) referred to as an "interpersonal culture" (p. 214). These interactions of teacher, student, and ensemble as a whole create what Eisner (2002) refers to as a "classroom milieu" (p. 74).

A visual description of the interactions between teacher and students in this ensemble is provided in Figure 11. The intent of this clustered display (Miles & Huberman, 1994) is to show the myriad of influences on the ensemble's band culture, or classroom milieu, and the characteristics of this ensemble. As seen in the figure, the teacher and students bring their own experiences and needs to the classroom. For example, Mr. Anderson brings his prior values and beliefs about band culture as well as his need to meet curricular goals; a student such as Anna brings her memories of her older brother's experience, her almost-daily socializing with Mr. Anderson before class, and her earnest love for band that she has trouble putting into words. For simplicity in design, only one student was added to the display; however in my conceptualization of

the band culture, or classroom milieu, each and every student would be clustered around the center in a similar fashion.
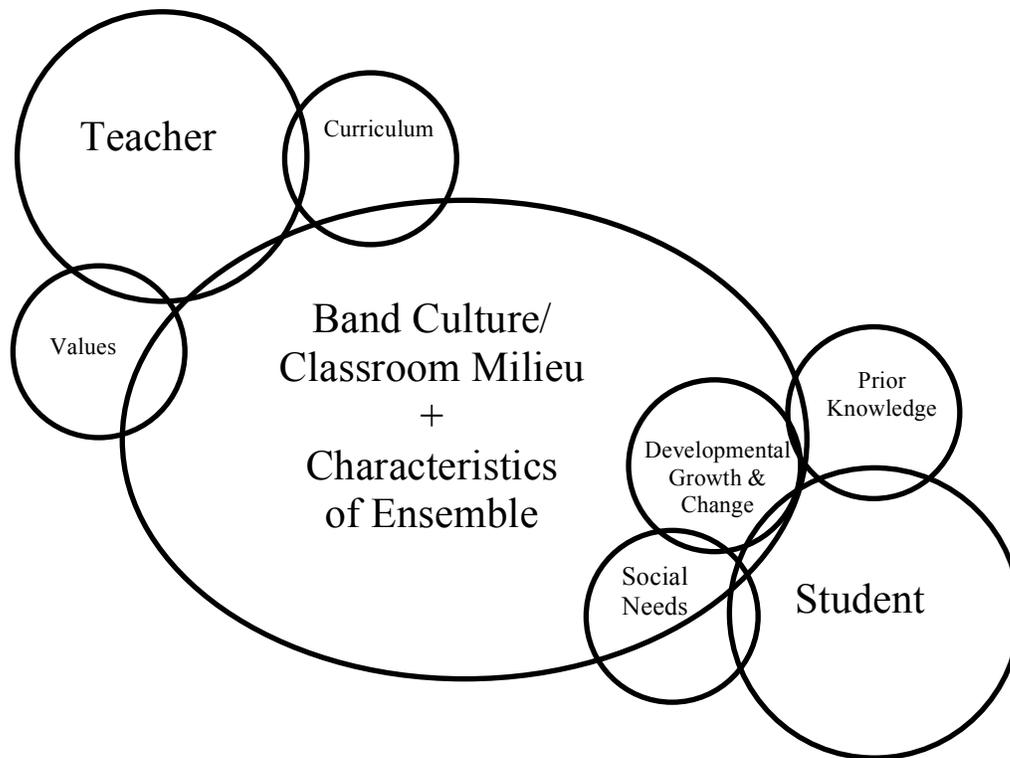
Figure 11: Visual Representation of Influences on Band Culture & Characteristics of Ensemble

An understanding of the band culture or classroom milieu of this case created a context in which to examine the possible flow experiences of students. Flow is related to learning, as students learn and develop new skills; both flow and learning are situated within the culture of this classroom (Shernoff, 2013). Eisner (2002) stated that students learn more than curricular content, or skills, due to the nature of the classroom milieu or, in this setting, the band culture:

What the milieu teaches is seldom on the list of aims for the arts, yet what the

milieu teaches can be of prime importance in helping students learn what it feels

like to function as a budding artist, to be really engaged in one's work, not for extrinsic reasons but for intrinsic ones." (pp. 74-75)

In the context of this case, the band culture helped students learn what it feels like to function as "budding" musician. If functioning as a budding musician helps students engage in music performance for intrinsic purposes, then students have the opportunity to experience flow in middle school band. I suggest that this opportunity for flow lies on a continuum, in that students at different stages may experience flow in different ways. I conceptualized this continuum as a "beginner musician" on one end, a "budding musician" in the middle, and an "advanced musician" on the other end. An "advanced musician" is a student whose ways of thinking resemble that of a high school, college, or adult musician in an ensemble. The continuum is displayed in Figure 12.

beginner musician	budding musician	advanced musician
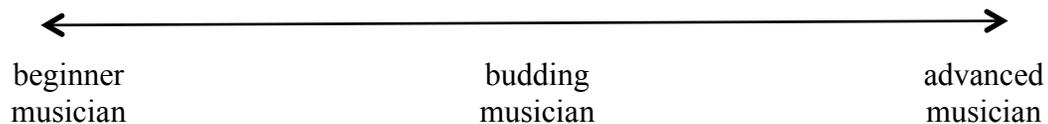
Figure 12: Continuum of Flow Opportunity

An examination of each individual student in a band class would show that no student is entirely a beginner musician or an advanced musician in terms of opportunity for flow. Rather, students may experience flow differently at different times based on their own musical skill, the processes of enculturation in the band class, and their own unique developmental characteristics. Furthermore, each dimension of flow could be isolated and placed on the continuum separately. For example, all levels of musicians

can experience the balance between challenge and skill dimension, as M.

Csikszentmihalyi and Csikszentmihalyi (1988) explained how this dimension manifests

itself with a beginner piano student:

> A beginning piano player will see learning the keys corresponding to the various
>
> notes as challenging, and might feel in flow simply by running the scales on the
>
> keyboard. As soon as the player feels confident with the scales, however, new
>
> challenges need to be found or he or she will get bored. (p. 261)

In contrast, the flow dimension of intrinsic motivation may appear more often on the

right side of the continuum because of the difficulty young adolescents have in being

intrinsically motivated. Students, for example, expressed they were aware of when they

did not perform well on their instruments but did not seem intrinsically motivated to

improve each time they were given an opportunity to repeat a performance. Furthermore,

as described in Chapter Two, due to brain development, student behavior may be erratic,

meaning that a student who acts like an advanced musician one day may act like a

beginner musician another day. Therefore, students may move back and forth along this

continuum as they grow as people and as musicians. To return to the balance between

challenge and skill dimension, Lily's reasoning that nothing was challenging in band for

her showed that her self-awareness may have been closer to the left side of the continuum

on the day she was interviewed.

To summarize, the opportunity for flow in the eighth grade band was comprised

of a combination of many factors. The teacher's values and needs coupled with the

students' prior knowledge and needs fused to create a band culture or classroom milieu.

The intent of this band culture was to create what Mr. Anderson called "professional-acting" musicians, who were intrinsically motivated to engage in music performance. Arguably, intrinsically motivated musicians are ones who experience other flow dimensions, such as the transformation of time described by the four student informants. In this study, Mr. Anderson may have not known if his students experienced flow in daily rehearsals (Reimer, 1995; Swanwick, 1999/2012) but he created access and opportunity for flow through his cultivation of band culture.

Chapter Summary

This chapter described the analysis of the quantitative results and the findings of the qualitative results. First, the quantitative results were presented as descriptive data and the results of an HLM analysis in order to answer the three research questions and accompanying sub-questions. Next, the qualitative results were presented. I introduced the people and setting of the eighth grade band before presenting the themes and flow dimensions that emerged from careful analysis of the data. These analyses were then used to answer the qualitative research questions. In the next chapter, the two data sets will be merged and a discussion of these results will occur in Chapter Six.
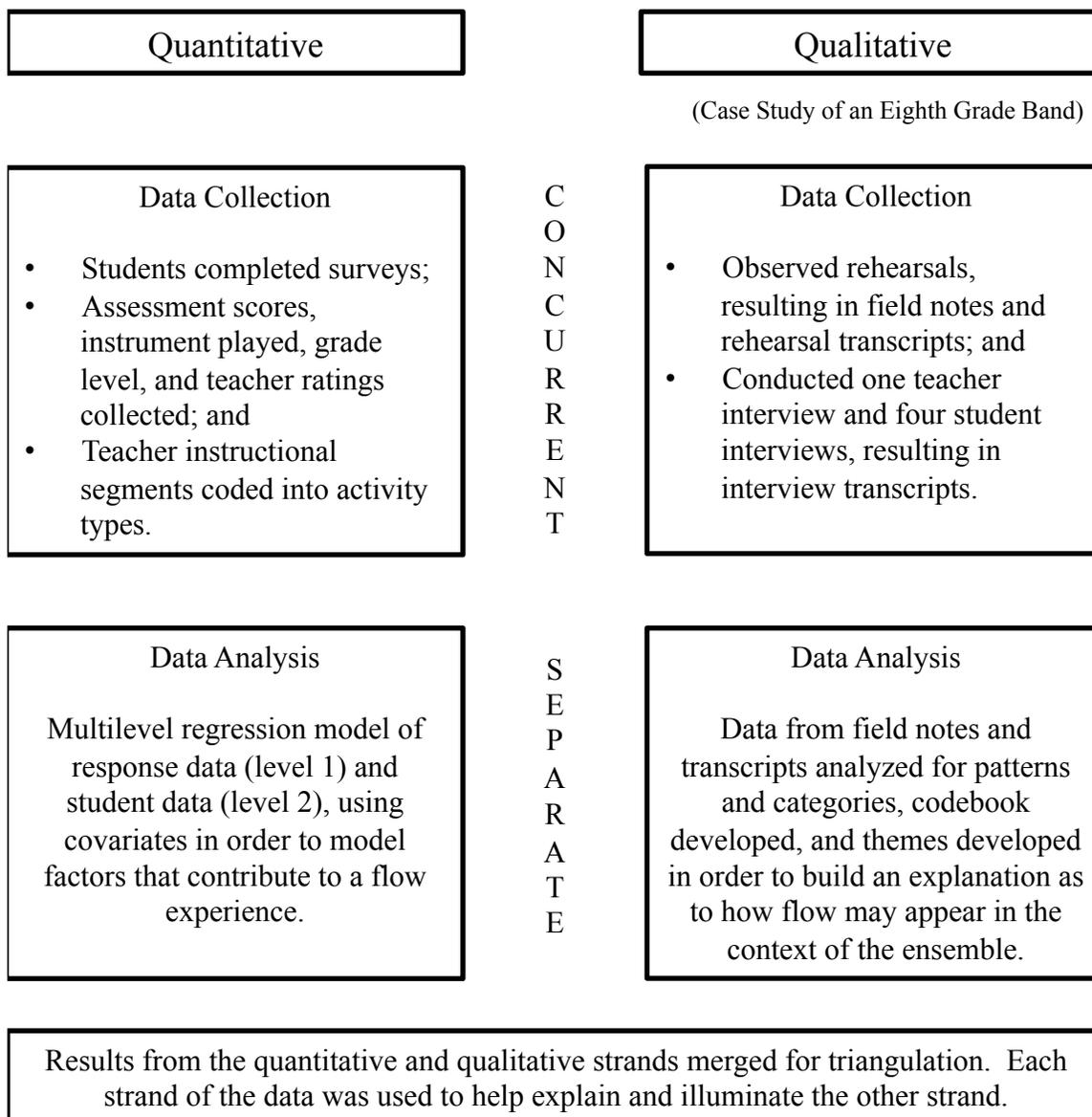
CHAPTER FIVE: MIXED METHODS ANALYSIS

This chapter presents the results of mixing the quantitative and qualitative results of this study that were presented in Chapter Four. First, the mixed methods design that was presented in Chapter Three for this study will be reviewed. Then, the results from the quantitative analysis will be summarized, followed by the emergent themes and conclusions from the qualitative analysis. The two types of data will be converged in the form of a side-by-side visual matrix; this convergence matrix will be displayed in the fourth section of the chapter. The chapter will end with a discussion of the areas of confirmation, enhancement, and contradiction between the two types of data.

Mixed Methods Design

The purpose of this study was to explore selected factors that may impact a student's frequency of flow experiences in a large group rehearsal setting. As outlined in Chapter Three, this study followed a convergent parallel mixed methods design (Creswell & Plano Clark, 2011). To remind the reader about the design of this study, the visual overview is presented again in Figure 13. Flow is a multidimensional construct (Hektner et al., 2007; Martin & Jackson, 2008), therefore a mixed methods approach may provide a deeper understanding of how students experience flow in middle school instrumental music. In this study, quantitative data and qualitative data were collected concurrently, analyzed separately, and then merged.

The quantitative data collection consisted of two types of surveys: a single occasion survey that measured students' perceptions of relationships in their classroom

and a researcher-designed Experience Sampling Method (ESM) survey for repeated measures data. In addition, demographic information was collected for each student. The qualitative method of inquiry was a case study of an eighth grade band. Data collection for the case study consisted of observations, field notes, rehearsal transcripts, and interviews. More detailed descriptions of both strands of data collection were presented in Chapter Three. The quantitative data and qualitative data were analyzed separately. These results were presented in Chapter Four and will be summarized in the next sections. This chapter presents the final stage of data analysis, in which the quantitative data and qualitative data will be compared and contrasted through the use of a data convergence matrix, followed by discussion of the matrix. The purpose in merging is so each type of data can help explain and enhance the results of the other (Bryman, 2006; Creswell & Plano Clark, 2011; Greene et al., 1989).

Quantitative		Qualitative
		(Case Study of an Eighth Grade Band)
Data Collection • Students completed surveys; • Assessment scores, instrument played, grade level, and teacher ratings collected; and • Teacher instructional segments coded into activity types.	C O N C U R R E N T	**Data Collection** • Observed rehearsals, resulting in field notes and rehearsal transcripts; and • Conducted one teacher interview and four student interviews, resulting in interview transcripts.
Data Analysis Multilevel regression model of response data (level 1) and student data (level 2), using covariates in order to model factors that contribute to a flow experience.	S E P A R A T E	**Data Analysis** Data from field notes and transcripts analyzed for patterns and categories, codebook developed, and themes developed in order to build an explanation as to how flow may appear in the context of the ensemble.

Results from the quantitative and qualitative strands merged for triangulation. Each strand of the data was used to help explain and illuminate the other strand.

Figure 13: Mixed Methods Design for this Study

Summary of Quantitative Analysis and Results

The quantitative data were analyzed using descriptive statistics and hierarchical linear modeling (HLM). The purpose of the quantitative analysis was to determine any relationships between selected factors that may influence flow, as operationalized in this

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strand of data collection as the balance between challenge and skill. The balance between challenge and skill was a type of repeated measures data because students rated their level of challenge and skill multiple times in class over multiple days. Consequently, each student had between four and 48 ratings of challenge and skill, depending on what class they were in. For each repeated measure, the absolute difference between these two ratings was calculated and reverse coded to create the variable DIFF. A larger DIFF value indicated that a student was approaching flow (e.g., a value of seven or eight) or was in the *flow channel* (Csikszentmihalyi, 1990) (if the value of the DIFF variable was nine). The mean score for the reverse coded absolute difference between challenge and skill was 4.58 ($SD = 2.88$).

The DIFF variable was the outcome variable for all of the hierarchical models presented in Chapter Four. I added seven factors, or predictor variables, into an unconditional model that had DIFF as the outcome; each factor was entered individually and the level of significance was examined for each factor. The three factors that significantly contributed to the unconditional model were then combined into a final regression model that represented the best fit given the data. The three factors, or predictor variables, that had a significant relationship to the DIFF outcome variable were Activity (type of activity), TC (Taking Charge, which was a measure of self-determination), and Match (a matched perception of student self-efficacy by the teacher and the student).

Another repeated measure variable that was collected was a rating of enjoyment for each activity. The mean enjoyment rating was 6.41 ($SD = 2.62$) and the data values

were negatively skewed (-.380, *SE* = .053). This suggested that students generally

enjoyed the activities they did during class. Spearman's rho calculations indicated that

there were statistically significant, but very weak, positive relationships between

enjoyment and challenge (r_s=.081, *p* < .001, two-tailed), as well as between enjoyment

and skill (r_s=.128, *p* < .001, two-tailed).

<p align="center">**Summary of Qualitative Analysis and Emergent Themes**</p>

My analysis of the qualitative data began by familiarizing myself with the data as

I started with a "top down," or deductive, approach (LeCompte & Schensul, 2013) by

looking for examples of the nine flow dimensions (Csikszentmihalyi, 1990). I gradually

sorted data into groups as I looked for potential codes, or for bits of data that seemed

interesting, insightful, or confusing. After re-examining my qualitative research

questions, I created a codebook that consisted of three conceptual "bins" (LeCompte &

Schensul, 2013, p. 82): flow, the ensemble environment, and adolescence. Coding

occurred using a "bottom up," or inductive, approach as I allowed codes to emerge from

the data. Creating and refining the codebook was a recursive process as I moved back

and forth between deductive and inductive thinking during the analysis. I also made an

interview summary of the four student interviews in order to compare and contrast the

students' responses to the interview questions, as recommended by LeCompte and

Schensul (2013).

Three themes emerged from the data regarding this eighth grade ensemble. First,

the teacher played a strong role in creating a band culture (Morrison, 2001) for students.

Second, both friendly competition and fierce rivalry were present in the eighth grade

band. Third, the students exhibited a wide range of developmental behaviors in class.

Within these themes, four of the nine dimensions of flow emerged from the data that

were worthy of further analysis: the balance between challenge and skill, unambiguous

feedback, the transformation of time, and intrinsic motivation. Of these, only the

dimensions of unambiguous feedback and the transformation of time seemed to occur in

the students during band class.

Two conclusions were generated from the analysis of data in relation to the

guiding research question: In what ways does the culture of the ensemble impact flow

experiences? First, the teacher's values and needs coupled with the students' prior

knowledge and needs created a type of interaction that created a band culture or

classroom milieu. The group personality of this band could be characterized by their

humorous interactions, friendships, rivalry with the other eighth grade band, and orderly

routines. Second, the intent of this band culture was to create "professional acting" (Mr.

Anderson, personal communication, December 5, 2013) musicians, who were

intrinsically motivated to engage in music performance. A continuum of flow

opportunity was constructed, with a beginner musician on one end and an advanced

musician on the other. Students move back and forth along the continuum based on their

individual development.

I followed three verification procedures suggested by Creswell (1998). First, I

triangulated the qualitative data by comparing field notes, reflective memos, interview

transcripts, and rehearsal transcripts. Second, I clarified my bias as a former middle

school band director. Because this study employed the phenomena of flow as its

theoretical framework, I also engaged in phenomenological reflection, or bracketing,

regarding my music performance experiences as a child and as an adult (Grbich, 2007).

My reflective essay was presented in Chapter Three. Third, I elicited two external

reviewers to review my codebook and sections of coded data. The reviewers confirmed,

clarified, or contradicted my codes. I integrated their suggestions into my analysis as I

proceeded to develop themes.

Presentation of Mixed Methods Analysis

In a convergent parallel mixed methods design, the merging of the quantitative

and qualitative data occurs as a third phase of analysis. Bryman (2007) challenged

researchers to make sure that "the end product is more than the sum of the individual

quantitative and qualitative parts" (p. 8) in a mixed methods study. The reason for

collecting quantitative and qualitative data in the context of this study was to provide a

richer explanation of factors that may contribute to flow experiences. The mixed

methods research question for this study was: To what extent do the quantitative results

on flow and enjoyment in the classroom intersect with the perceptions of flow shared by

students?

In order to answer the mixed methods research question for this study, I

constructed a data convergence matrix in order to display the quantitative and qualitative

results in a side-by-side summary (Creswell & Plano Clark, 2011). A matrix is an

effective way to integrate multiple types of data (Bazeley, 2009; Creswell & Plano Clark,

2011; Miles & Huberman, 1994). Miles and Huberman stated:

displaying your reduced data in a systematic way has immense consequences for

your understanding. It requires you to think about your research questions and what portions of your data are needed to answer them; it requires you to make full analyses, ignoring no relevant information; and it focuses and organizes your information coherently. (p. 239)

Reducing the quantitative and qualitative data into a matrix allows for synthesis and comparisons and allows the reader to see how both the quantitative and qualitative data provide evidence for the research questions or topics presented (Bazeley, 2009; Creswell & Plano Clark, 2011).

Initially, I conceived developing a matrix centered on the theoretical framework of flow (Csikszentmihalyi, 1990) because flow theory shaped this study from conception to the final stage of analysis. The organization of this matrix was to be a table consisting of the flow dimensions constituting a series of rows with corresponding columns for quantitative data and qualitative data to display how each flow dimension appeared in each strand of data analysis. As I analyzed each strand of data separately, I decided that this type of matrix would not be useful to compare the data for two reasons. First, the quantitative data collection only measured the flow dimension of the balance between challenge and skill. Second, the results from the qualitative data analysis suggested that only four flow dimensions occurred in the eighth grade band case.

Consequently, I decided to organize the matrix according to five factors that may impact a student's flow experience in a large ensemble setting; an organizational scheme such as this aligns with the purpose of the study. For factors, I used the a priori factors from the quantitative research questions and the themes that emerged from the qualitative

data analysis. For purposes of consistency and clarity, they will be referred to as factors

in the matrix. A list of these factors, along with the type of data the factor corresponds

to, is presented in Table 5.

Table 5: Factors Used for Data Convergence

Factor	Quantitative data type	Qualitative data type
1. Type of classroom activity	Classroom activities were coded into eight categories: rehearsing repertoire, warm-ups, tuning, sight singing, lecture or demonstration, listening and critiquing, rehearsing and video, and video only. HLM analysis using a categorical predictor requires choosing one "reference category" and dummy coding the rest to zero. Rehearsing repertoire was chosen as the reference category for analysis.	Student interview data.
2. Classroom culture/environment	ClassMaps subscales Following the Class Rules (FCR) and My Teacher (MT).	Themes: Teacher as culture bearer and Competition.
3. Individual student development	ClassMaps subscales My Classmates (MC) and Taking Charge (TC)	Theme: The *solo* in the *tutti,* or the individual in the group.
4. Performance ability	Mean score of computerized assessments from *SmartMusic*	Teacher interview data.
5. Matched perception of student self-efficacy between teacher and student	ClassMaps subscale Believing in Me (BIM) correlated with teacher's ratings of students. HLM analysis using a categorical predictor requires choosing one "reference category" and dummy coding the rest to zero. A match in perception became the reference category and non-matches were coded to zero.	None

The factors listed in Table 5 provide the organizational framework for the data convergence matrix to follow. Data that correspond to each factor will be presented. The first column of the matrix presents quantitative data and the second column presents

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qualitative data; some areas have only one type of data associated with them. To

facilitate readability, sub-factors were created for factors that generated multiple data

examples (i.e., the role of the teacher sub-factor within the classroom environment

factor). The third column of the matrix presents the flow dimension (or dimensions) that

relate to the data; if no flow dimensions relate to the data, this column is left blank. The

final column indicates how the two data relate to each other in convergence. Adopted

from Fitzpatrick (2008), three labels were used to indicate the type of convergence. If the

quantitative and qualitative data align, they are labeled as *confirming* one another. If the

data provide similar perspectives but do not directly confirm one another, they are labeled

as *enhancing* one another. If the quantitative and qualitative data provide different

perspectives, they are labeled as *contradicting* one other. If data is missing from either

the quantitative or qualitative columns, no convergence label was assigned. By

examining the type of data convergence (*confirm*, *enhance*, or *contradict*), the matrix

facilitates interpretation of the two strands of data. The matrix is presented in Table 6.

Table 6: Data Convergence Matrix

Quantitative data	Qualitative data	Related flow dimension(s)[8]	Data convergence
Factor 1: Type of classroom activity			
The type of activity had a positive relationship to the balance between challenge and skill (.86, $p < .001$). This means that students will move closer to being in the *flow channel* when students rehearse concert music.	Lily: "Once we start playing our band pieces, especially the ones I like, I'm always like: 'wait, where did the time go?' and it's already to time to go and I'm like: 'I haven't played it yet,' and you want to play one more time, or hear a certain part again" (personal communication, December 5, 2013). All student informants expressed that time sped up or slowed down when playing concert music in class.	Balance Between Challenge and Skill Time Transformation	Confirm
Factor 2: Classroom culture/environment			
No Quantitative Parallel	Interaction of teacher's values and needs coupled with students' prior knowledge and needs created a band culture, which included a group characteristic of humor, friendships, rivalry, and order.		

Sub-factor 1: Order			
Moderate mean scores for Following the Class Rules (FCR) subscale ($M = 1.87$, $SD = .563$). FCR was not a significant predictor of the response variation.	There was such a well-established sense of order in the classroom that classroom management did not seem to be an issue (e.g., Mr. Andersons's use of the whistle and "sizzle once if you can hear me").		Contradict
Sub-factor 2: Role of teacher			
Moderately high mean scores for My Teacher (MT) subscale ($M = 2.60$, $SD = .474$). However, MT was not a significant predictor of the response variation.	Teacher provides access and opportunity for flow by (a) providing a rationale as to why students are doing an activity, (b) game-like directives and friendly competition in class (e.g., candy contest), (c) a willingness to adapt instruction, (d) setting high expectations for performance.	Balance between challenge and skill	Contradict
Sub-factor 3: Competitive nature of classroom			
No Quantitative Parallel	Students engaged in a competitive rivalry with another class. Steve commented on their "burning hatred for second hour [band]" (rehearsal, December 11, 2013).		

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Sub-factor 4: Developing dispositions

| No Quantitative Parallel | "Good band students," according to Mr. Anderson, understand and take necessary action to be successful, responsible, and "professional acting" musicians (personal communication, December 5, 2013). Mr. Anderson employed a daily tuning ritual, displayed a number of symbolic representations of band culture in the room, and developed extra-curricular opportunities. | | |

| | Factor 3: Individual student development | | |

| No Quantitative Parallel | Opportunity for flow falls along a continuum of beginner musician to advanced musician. Student individual development affects where the student may be on the continuum from day to day. | | |

Sub-factor 1: Intrinsic motivation

| Moderate mean scores for Taking Charge (TC) subscale ($M = 2.25$, $SD = .482$). TC had a negative relationship to the balance between challenge and skill (-1.29, $p < .001$). This means that students with a | Mr. Anderson: "I'm all about intrinsic motivation, but sometimes you need to go Pavlovian. Not all kids have intrinsic motivation" (field notes, November 13, 2013). Mr. Anderson wants his students to "want to learn" | Intrinsic motivation

Unambiguous feedback | Contradict |

higher rating of being intrinsically motivated will move away from being in the *flow channel*.	(personal communication, December 5, 2013). Students expressed being aware when they made mistakes but did not seem motivated to fix them in class, unless directly prompted by the teacher.		
Sub-factor 2: Snap judgments			
Very weak correlations between level of enjoyment and level of challenge (r_s=.081, $p < .001$). Very weak correlations between level of enjoyment and level of skill (r_s=.128, $p < .001$).	Students "equate easy with fun" (field notes, November 13, 2013). Malcolm contradicted this view in that he found performing at a high level to be challenging and fun.	Balance between challenge and skill	Contradict
Sub-factor 3: Challenge			
Mean rating of perceived challenge was 3.39 ($SD = 2.19$). Mean rating of perceived skill was 8.56 ($SD = 1.51$). Mean rating of balance between challenge and skill was 4.58 ($SD = 2.88$). This means that students were not in the *flow channel*, as a value close to zero would represent flow.	Lily stated, "nothing is challenging" (personal communication, December 5, 2013), but in class stated that she could play high Fs this year compared to last year in *Simple Gifts*. Mr. Anderson expressed difficulty in challenging all students at an appropriate level. He "knows that what he is teaching is too easy for some and too hard for others" (field notes, November 5, 2013).	Balance between challenge and skill	Confirm Enhance

Sub-factor 4: Socializing			
Moderate mean scores for My Classmates (MC) subscale (*M* = 2.49, *SD* = .621). MC was not a significant predictor of the response variation.	Students socialized before, during, and after class. They often joked with each other as a form of socialization.		Enhance
Factor 4: Performance ability			
Mean score of performance ability of students was 42.84 (*SD* = 10.02). Performance ability was not a significant predictor of the response variation.	District honor band created for students with high performance ability because, according to Mr. Anderson, they were not challenged in class. Prior to starting the honor band they were "losing the wrong kids, and it was the kids who were doing really well but got bored by the level of the music…and so, we started that honor band" (Mr. Anderson, personal communication, December 5, 2013)	Balance between challenge and skill	Contradict
Factor 5: Matched perception of student self-efficacy between teacher and student			
Mean score of Believing in Me (BIM) subscale was 2.55 (*SD* = 4.10). Mean score of Teacher rating was 2.34 (*SD* = .727). Moderate, positive monotonic correlation between student and teacher ratings (r_s = .595, *p* < .001, two-tailed). Absolute difference for individual	No Qualitative Parallel	Balance between challenge and skill	

scores calculated to be a match (1) or non-match (0). Match had a positive relationship with the balance between challenge and skill (1.03, *p* < .01). This means that students whose self-efficacy matched the teacher's rating of skill and ability will move away from being in the *flow channel* when compared to students whose self-efficacy did not match the teacher's rating.

Areas of Confirmation or Enhancement in the Data

There were three areas of confirmation or enhancement in the data. The first area of confirmation was in the Type of Classroom Activity factor. The second and third areas of confirmation or enhancement were the sub-factors of Challenge and Socializing within in the factor of Individual Student Development. These areas of confirmation or enhancement will be discussed in this section.

First, students enjoyed rehearsing concert music in class. Quantitative data indicated a positive relationship between rehearsing concert music and the flow dimension of the balance between challenge and skill. This means that students tended to approach the flow channel when rehearsing concert music when compared to the other activities in class that I witnessed throughout the entire quantitative sample of band classes (warm-ups, tuning, sight singing, lecture or demonstration, listening and critiquing, rehearsing and video, and video only). Qualitative data confirm that students enjoyed the second part of class more (rehearsing concert music) compared to the first part of class (Skill Builders, or warm-ups). They described the time spent playing the concert music as moving quicker, as in Lily's comment, "I'm always like, 'wait, where did the time go?'" (personal communication, December 5, 2013). The sense of time moving faster or slower is one of the dimensions of flow.

The second area of confirmation or enhancement was in the sub-factor of Challenge in the Individual Student Development factor. Although Mr. Anderson was aware of the inherent difficulties associated with being able to challenge each and every student within the structure of the curriculum, the quantitative data suggest that Mr.

Anderson may have been unsuccessful at challenging *any* of his students, as the mean rating of perceived challenge was 3.39 (*SD* = 2.19). In addition, students did not experience the flow dimension of the balance between challenge and skill, which would have been represented by a value close to one, based on their quantitative survey responses (*M* = 4.58, *SD* = 2.88). As previously described in the qualitative analysis, at no time did a student describe feeling challenged yet confident in their ability to meet that challenge. First chair trumpet player Lily expressed that nothing was challenging in band during her interview but revealed a change in her own balance between challenge and skill when she revisited a piece from the previous year. This juxtaposition will be discussed more in Chapter Six.

The final area in which the two data types enhanced each other was in the sub-factor of Socializing in the Individual Student Development factor. Young adolescents enjoy socializing; during my observations, students not only socialized before and after class, but during class as well. They often told jokes to each other and to Mr. Anderson, and used transitions as a chance to visit and share with each other. In the quantitative data, the ClassMaps subscale of My Classmates (MC) had a mean score of 2.49 (*SD* = .621) for the entire quantitative sample. Items in My Classmates related to how students socialize with each other in class. Although socialization had no direct relation to flow, evidence from both strands of data confirmed that students enjoyed each other's company.

Areas of Contradiction in the Data

There were five areas of contradictions in the data. The first two areas of contradiction were in the sub-factors of Order and Role of Teacher in the Classroom Culture/Environment factor. The third and fourth areas of contradiction were in the sub-factors of Intrinsic Motivation and Snap Judgments in the factor of Individual Student Development. The last area of contradiction was in the Performance Ability factor. These areas of contradiction will be described in this section.

First, there was a contradiction in the quantitative and qualitative data regarding rules and order in the classroom. The ClassMaps subscale of Following the Class Rules (FCR) had a mean score of 1.87 ($SD = .563$) for the quantitative sample. Items in FCR related to how students perceived their classmates to follow the class rules: e.g., "Most kids in this class behave well even when the teacher isn't watching" (Doll, 2007, p. 2). Given the well-established sense of order in the eighth grade band, including Mr. Anderson's use of a whistle to redirect the attention of the class, I would have expected the FCR mean to be higher. FCR did not have a significant relationship to flow, nor did the well-established sense of order in the eighth grade band have a direction connection to student flow experiences.

Second, Mr. Anderson's role in providing an opportunity for flow experiences to occur did not align between the quantitative and qualitative data. Although students' mean scores from the ClassMaps subscale were moderately high ($M = 2.60$, $SD = .474$) for My Teacher (MT), indicating that they found Mr. Anderson to be supportive and friendly, it was not a significant predictor of the response variation for the balance

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between challenge and skill outcome variable (DIFF). Qualitative data, however, suggest that Mr. Anderson did provide access and opportunity for flow in many ways. He discussed how he thought it was important to tell students why they were doing certain activities, and he expressed a willingness to adapt instruction for students who needed extra help. In class, Mr. Anderson created a game-like atmosphere, encouraged moments of friendly competition between sections, and pushed students to perform to the best of their ability. This may suggest a misalignment between the teacher's perception and students' perception of the teacher's role in creating an optimal learning environment (Shernoff, 2013).

The third area in which the quantitative and qualitative data contradicted each other was in the sub-factor of Intrinsic Motivation in the Individual Student Development factor. One of the dimensions of flow relates to a person being intrinsically motivated to seek out a flow-inducing experience. The qualitative data suggested that the development of intrinsic motivation was personal to each individual student. Mr. Anderson felt that a student who was intrinsically motivated was on their way to becoming a "professional acting" musician (personal communication, December 5, 2013), moving away from being a beginner musician. In contrast, the ClassMaps subscale Taking Charge (TC) had a negative relationship to the balance between challenge and skill (-1.29, $p < .001$). Doll, Spies, LeClair et al. (2010) described students with high TC ratings as ones who "understand that they are responsible for their learning, take credit for their academic successes, and devise concrete and rational plans to address academic failures. They clearly value academic progress and are intrinsically motivated

students" (p. 206). The results from this study indicated that students who have higher

levels of intrinsic motivation are actually less likely to be in the flow channel.

The fourth area of contradiction was also in the Individual Student Development

factor, under the sub-factor of Snap Judgments. During my observations of the eighth

grade band rehearsals, I noticed that students quickly made judgments regarding their

music performance or the Skill Builder activities in class. I wrote in my field notes that

students "equate easy with fun" (field notes, November 13, 2013) in the sense that this

was an "if, then" experience: if the activity was fun, then it was easy and vice versa.

Given this, I had expected a strong positive relationship between enjoyment and skill and

a strong negative relationship between enjoyment and challenge from the quantitative

data. However, this was not the case. Enjoyment and skill had a very weak positive

correlation ($r_s = .081$, $p < .001$) and enjoyment and challenge had a very weak positive

correlation ($r_s = .128$, $p < .001$).

The final area of contradiction between the quantitative and qualitative data was

in the Performance Ability factor. Performance ability was the mean score of

computerized performance assessments using *SmartMusic* technology, which constituted

part of the curriculum. Performance ability was not a significant predictor of the

response variation for the balance between challenge and skill outcome variable.

However, Mr. Anderson stated that students with high performance ability were bored in

class; a solution to this was the creation of the district honor band, which students

auditioned to gain entry into. Given this information, it would be expected that there

would be a significant relationship between performance ability and balance between challenge and skill.

Summary of Data Convergence Matrix

The use of a data convergence matrix provided a visual means of condensing the quantitative and qualitative data for comparison and synthesis. The data convergence matrix was centered around five factors, defined by the a priori factors collected during the quantitative portion of data collection and the emergent themes from the qualitative data collection. Some factors stood alone in that there were no quantitative or qualitative parallel to the data presented. Some of the factors did not have a direct relationship to flow dimensions either, such as the competitive rivalry that was present in the eighth grade band. A discussion of these factors as well as a discussion of the areas of data convergence will follow in Chapter Six.

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Chapter Summary

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This chapter presented the mixed methods analysis of the quantitative and qualitative data. The results from each strand of data were summarized before presenting the data convergence matrix. There were instances of confirmation, enhancement, and contradiction in the responses from the quantitative sample and the qualitative data that emerged from the eighth grade case study. A discussion of these results will be presented in Chapter Six, along with implications for music education and recommendations for future research.

CHAPTER SIX: DISCUSSION

This chapter presents the discussion of the results presented in the preceding two chapters. In the first section, I review the purpose of the mixed methods study, the research questions for each strand of data collection, and the mixed methods design. In the second section, I review the analyses from both the quantitative and qualitative data. Then, a review of the mixed methods analysis follows. The fourth section is the discussion of the results of the mixed methods analysis. Following the discussion, I make recommendations for future research and discuss the implications this study has on the profession of music education.

Review of Purpose, Research Questions, and Design

The purpose of this mixed methods study was to explore selected factors that may impact a student's frequency of flow experiences in a large group rehearsal setting and how these flow experiences may relate to achievement and enjoyment in a middle school band. Because this was a mixed methods study, two sets of research questions were generated: one for the quantitative portion of the study and one for the qualitative portion of the study. The quantitative research questions were:

1. Do students report experiencing enjoyment during class?

2. Do students report experiencing the flow dimension of the balance between challenge and skill during class?

    a. How does the balance between challenge and skill relate to the type of classroom activities?

    b. How does the balance between challenge and skill relate to the classroom

environment?

    c. How does the balance between challenge and skill relate to students'

        performance ability?

3. To what extent does the teacher's perception of student self-efficacy relate to an

   individual student's self-efficacy?

    a. How does the balance between challenge and skill relate to the match of

        teacher perception and student perception of student self-efficacy?

The qualitative portion of the study was guided by the following question: In what ways

does the culture of the ensemble impact student flow experiences? In addition, two sub-

questions helped shape data collection and analysis:

1. In what ways do the nine dimensions of flow manifest themselves in the

   students' descriptions of middle school band?

2. How does the developmental level of the young adolescent inform their

   descriptions of flow in middle school band?

    This study used a convergent parallel mixed methods design (Creswell & Plano

Clark, 2011). Quantitative and qualitative data were collected concurrently, analyzed

separately, and then merged to answer the following research question: To what extent do

the quantitative results on flow and enjoyment in the classroom intersect with the

perceptions of flow shared by students? The intent to collect both quantitative and

qualitative data for the purpose of merging them together was to create a more

comprehensive picture of student flow. The quantitative data collection consisted of two

types of surveys: a single occasion survey that measured students' perceptions of

relationships in their classroom and a researcher-designed Experience Sampling Method (ESM) survey for repeated measures data. In addition, demographic information was collected for each student. The qualitative method of inquiry was a case study of an eighth grade band. Data collection for the case study consisted of observations, field notes, rehearsal transcripts, and interviews. A complete description of the data collection process for both the quantitative and qualitative strands of the study were presented in Chapter Three.

Review of Quantitative and Qualitative Analyses

The presence of flow for the quantitative portion of the study was determined by the absolute difference of ratings for perceived challenge and skill (labeled as the variable DIFF). This means that if the absolute difference between a student's challenge rating and skill rating equaled zero, that student was considered to be in flow at the time of the response. If the absolute difference between a student's challenge rating and skill rating was greater than zero, the ratings for challenge and skill differed in some way at the time of the response. For ease in interpreting results, the absolute difference values were reverse coded: a larger value indicated that a student was either in flow (e.g., a value of nine) or approaching flow (e.g., a value of seven or eight) whereas a smaller value indicated that a student was not in flow (e.g., a value of one or two). The mean DIFF score was 4.58 ($SD = 2.88$), suggesting that students were often not in flow during class.

DIFF was the outcome variable for all of the hierarchical models presented in Chapter Four. Seven factors, or predictor variables, were entered individually into an unconditional model that had DIFF as the outcome. The three factors that significantly

contributed to the unconditional model were then combined into a final regression model that represented the best fit given the data. The three factors, or predictor variables, that had a significant relationship to the DIFF outcome variable were Activity (type of activity), TC (Taking Charge, which was a measure of self-determination), and Match (a matched perception of student self-efficacy by the teacher and the student). Activity had a positive relationship to the outcome variable, meaning that students were more likely to approach being in flow when rehearsing repertoire. TC and Match had negative relationships to the outcome variable, meaning that students were more likely to move away from being in flow when they rated themselves as being more intrinsically motivated and if their perception of self-efficacy matched their teacher's perception.

In the qualitative case study of an eighth grade band, three themes emerged from the data. First, the teacher played a strong role in creating a band culture (Morrison, 2001) for students. Second, both friendly competition and fierce rivalry was present in the eighth grade band. Third, the students exhibited a wide range of developmental behaviors in class. Within these themes, four of the nine dimensions of flow emerged from the data that were worthy of further exploration: the balance between challenge and skill, unambiguous feedback, the transformation of time, and intrinsic motivation. Of these, only the dimensions of unambiguous feedback and the transformation of time seemed to occur in the students during band class.

To answer the guiding question - in what ways does the culture of the ensemble impact flow experiences? - two conclusions were generated from the emergent themes and examination of flow dimensions. First, band culture is a result of the interactions

between teacher and student; each individual brings their own values, beliefs, and needs to the classroom. These interactions also create a unique personality, or "interpersonal culture" (Davis, 2006, p. 214), of the ensemble. Second, the intent of this band culture was to create "professional acting" musicians (Mr. Anderson, personal communication, December 5, 2013), who were intrinsically motivated to engage in music performance. A continuum of flow opportunity was theorized, with a beginner musician on one end and an advanced musician on the other. Young adolescent students move back and forth along the continuum based on their individual development.

The results from the quantitative data and the conclusions generated from the qualitative data were presented in Chapter Four. In Chapter Five, the two analyses were merged and areas of confirmation, enhancement, or contradiction were examined; these results will be summarized in the next section. A discussion of the mixed methods results, recommendations for future research, and implications for the music education profession will follow this summary.

Review of Mixed Methods Analysis

The purpose of this mixed methods study was to examine selected factors that may impact flow. The quantitative data collection was centered on the following a priori factors: classroom environment, classroom activities, performance ability, and whether a student's sense of self-efficacy aligned with the teacher's perception of that student's skill and ability. Additional factors and sub-factors were developed based on themes that emerged from the qualitative case study of an eighth grade band. First, the study of the band culture within this eighth grade band provided a deeper understanding of the

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classroom environment, enhancing the quantitative data from the ClassMaps survey.

Second, the development of the individual students may effect how they perceive flow experiences.

The factors and sub-factors from the quantitative and qualitative analyses were converged in a visual matrix for comparison and synthesis. Some factors stood alone in that there were no quantitative or qualitative data to complement what was presented. There were instances where the two strands of data confirmed or enhanced each other and instances where the two strands of data contradicted each other. These areas of confirmation, enhancement, and contradiction will be discussed in the next section. A truncated data convergence matrix is displayed in Table 7 to remind the reader of the factors and sub-factors presented in Chapter Five.

Table 7: Summary of Data Convergence Matrix

Factor (including sub-factors)	Data type(s)	Flow dimensions	Data convergence
1. Type of classroom activity	Quan & Qual	Balance between challenge and skill Time transformation	Confirm
2. Classroom culture/environment • Order • Role of teacher • Competitive nature of classroom • Developing dispositions	Quan & Qual	Balance between challenge and skill	Contradict
3. Individual student development • Intrinsic motivation • Snap judgments • Challenge	Quan & Qual	Balance between challenge and skill Unambiguous feedback Intrinsic motivation	Confirm, contradict, & enhance

• Socializing			
4. Performance ability	Quan & Qual	Balance between challenge and skill	Contradict
5. Matched perception between teacher and student	Quan	Balance between challenge and skill	

Discussion of Mixed Methods Results

In this section I will provide a discussion of the merged results. The mixed methods research question for this study was: To what extent do the quantitative results on flow and enjoyment in the classroom intersect with the perceptions of flow shared by students? This section will begin by exploring the areas of confirmation between the two types of data. Then, I will explore the areas of contradiction between the two types of data followed by an interpretation of what the areas of contradiction may indicate in the context of this study.

During a rehearsal, musicians in an ensemble generally prepare music so that it can be performed at a future time for an audience. Students at Harmony Middle School were no different in this regard, however a number of "Skill Builder," or warm-up, exercises were part of every class routine. Results from the mixed methods analysis indicated that students felt differently about Skill Builder exercises when compared to rehearsing concert music. In the quantitative analysis, rehearsing concert music had a positive relationship with the balance between challenge and skill variable. In the qualitative data, students commented that rehearsing the concert music was more enjoyable than the Skill Builder exercises and perceived that time passed more quickly when rehearsing concert music. It may be possible that rehearsing repertoire helps to

create opportunity for flow to occur in young adolescent musicians, as supported by the relationship to the balance between challenge and skill and the comments regarding time transformation, two of the flow dimensions. Conti (2001) found that there were significant relationships between time awareness (as measured by checking the time less often or losing track of time) and intrinsic motivation; being intrinsically motivated is another of the flow dimensions. This finding in the present study is congruent with previous flow research that suggested the type of activity plays a role in having a flow experience (Schmidt et al., 2007), specifically large ensemble rehearsals or performance (Diaz & Silveira, 2012; Smolej Fritz & Avsec, 2007). In this classroom setting, it could be that rehearsing repertoire mimicked a performance because the concert music was longer than the individual Skill Builder exercises. Although the specific repertoire rehearsed was not a focus of the present study, repertoire selection is widely discussed in music education (e.g., Cramer, 1997); the present study underscores the importance of this part of the curriculum.

In contrast, Cassie (2011), in her research with beginner sixth grade orchestra students, found that flow was observable during warm-up exercises. Cassie supposed that the students enjoyed playing the warm-up exercises because they were composed in unison rather than composed to create melody and harmony. This difference between Cassie's findings and the current findings may be attributable to the fact that the young adolescent students in the current study had been playing their instruments for longer than one year; beginner musicians in middle school settings may build self-confidence by playing unison melodies. Regardless, both Cassie's study and the current study examined

how the specific activity within the music class relates to flow as opposed to comparing the flow experience between classes in school (e.g., math and music) or between tasks in school (e.g., lecture and class discussion). Research that utilizes ESM data collection or observation protocols (such as the R-FIMA used by Cassie) captures the nuances of teaching and learning in music classrooms.

Young adolescents in this study enjoyed socializing with each other, as indicated by both the quantitative and qualitative data. In the quantitative results, the ClassMaps subscale of My Classmates (MC) had a mean score of 2.49 (*SD* = .621), indicating that students felt they had positive relationships with their peers. The qualitative data also indicated that students socialized with each other before, during, and after class. During times of socialization, students shared jokes and engaged in conversation with Mr. Anderson. Positive relationships appeared to be a characteristic of the band culture of this eighth grade ensemble, as described in Chapter Four. This finding aligns with previous research regarding the importance of young adolescent socialization as well as the importance of socialization in school music ensembles. Lounsbury and Clark (1990) stated that young adolescent socialization "is a developmental need that is necessary for healthy emotional growth" (p. 6). Adderley et al. (2003) and Campbell et al. (2007) found that students who participated in high school music ensembles perceived the social benefits they received (often described as feeling like a family or team) as important. It seems likely that future research that examines socialization in middle school ensembles could easily connect the importance of social benefits in high school ensembles to the importance of social relationships in middle school through participation in music.

The rationale for employing a mixed methods approach in the present study was to provide a deeper understanding of the conceptualization of flow in a middle school instrumental classroom; one strand of data complemented and enhanced the other strand. The integration of the quantitative and qualitative data showed that rehearsing repertoire may indeed create an opportunity for flow to occur and that socialization is important to young adolescents. In these two merged areas, the analyses appeared to converge. In contrast, there were a number of merged areas where the analyses appeared to diverge, or contradict each other. Each of these areas will be described in the next several paragraphs followed by a discussion as to why these contradictions may have occurred.

First, the merged data indicated a discrepancy in the students' perception of classroom behavior and the observed sense of order and classroom management. The ClassMaps subscale of Following the Class Rules (FCR) had a moderately low mean score ($M = 1.87$, $SD = .563$), indicating that students at Harmony Middle School did not feel their classmates had high levels of behavioral self-control (Doll, Spies, Champion, et al., 2010). However, the qualitative data suggested that rules and order was an important contributor to the overall ensemble culture as Mr. Anderson seamlessly included a number of classroom management techniques into eighth grade band. Shernoff (2013) attributed the teacher's classroom management ability, characterized by such things as keeping control, redirecting misbehaviors, and setting clear rules and procedures (p. 167), as one of the many simultaneous factors that occur when students are engaged and are in flow. Therefore, it was expected that Following the Class Rules (FCR) should have had a

high mean score and should have been a significant predictor of the balance between challenge and skill.

Second, the merged results indicated inconsistency regarding the teacher's importance as part of possible flow experiences. Numerous researchers have suggested that the teacher or conductor plays a strong role in creating flow experiences for students (Diaz & Silveira, 2012; Freer, 2008; Gonzalez-Cutre et al., 2009; Kraus, 2003, Marotto et al., 2007) and for impacting student engagement and success (Davis, 2006; Tomlinson, 1995; Yair, 2000). In the present study, the quantitative results showed that students generally had positive feelings about their teacher, Mr. Anderson ($M = 2.60$, $SD = .474$), however this was not a significant predictor in the balance between challenge and skill outcome variable as might one expect in light of previous research. In contrast, conclusions generated from the qualitative data suggested congruence between the present study and previous research in that Mr. Anderson was instrumental in providing access and opportunity for flow to occur through his role as a culture bearer. Shernoff (2013) stated that teachers create opportunities for flow by having a challenging curriculum, high expectations for success, and a network of support within the classroom.

Third, the merged data indicated a discrepancy in the relationship of performance ability to flow experiences. In the quantitative data, average performance ability as measured by computerized *SmartMusic* assessment grades was high with a mean score of 42.84 out of a maximum score of 50 ($SD = 10.02$). Performance ability was not a significant predictor to the balance between challenge and skill outcome variable suggesting that any student, regardless of ability level, has the possibility of experiencing

this flow dimension. This finding aligns with previous research by Clementson (2013).

In the qualitative data, Mr. Anderson explained how he noticed a difference in the

behavior and motivation of students that he considered to have high performance ability

prior to developing an extra-curricular district honor band. He observed that students

who participated in the district honor band seemed to enjoy band class more and became

leaders in band class. Although the bands at Harmony Middle School were not tracked,

meaning that students were not placed in a band class based on an achievement or ability

rating, the development of the district honor band may have created a tacit hierarchy or

social structure among the students. Carbonaro (2005) suggested that a student's track

placement, or in this case being selected to participate in district honor band, might effect

a "teacher's judgment about their [students'] effort, independent of the actual levels of

effort the students exert" (p. 40). Therefore, this area of contradiction between the

quantitative and qualitative data may be attributable to a difference in teacher perception

when compared to empirical data.

Fourth, the merged data indicated a troubling inconsistency regarding intrinsic

motivation and flow in this sample of young adolescents. In the quantitative data, the

ClassMaps subscale Taking Charge (TC) had a negative relationship to the balance

between challenge and skill (-1.29, $p < .001$), meaning that students with higher TC

scores were more likely to move away from having a balance between challenge and

skill. This ClassMaps subscale relates to intrinsic motivation and students with higher

TC scores are considered to be intrinsically motivated (Doll, Spies, LeClair, et al., 2010).

This result was unexpected and is contrary to flow theory that states students who have

flow experiences in music class are more likely to be intrinsically motivated to repeatedly engage in music class.

The qualitative data suggested that the development of intrinsic motivation was personal to each individual student, however Mr. Anderson expressed that many of his students were not intrinsically motivated, lacking a "want to learn" (personal communication, December 5, 2013), or a continuous desire to improve and grow as musicians. Eccles et al. (1993) argued that students are likely to exhibit intrinsically motivated behaviors when teachers provide them with opportunities to make classroom decisions and when there are positive relationships between teachers and students (see also Davis, 2006). Both the quantitative and qualitative data support the idea that students felt as if they had a positive relationship with their teacher. Perhaps Mr. Anderson's feeling that his students weren't intrinsically motivated was more a reflection of his sense of teacher effectiveness rather than what students were actually feeling. It may also be that the age of the students and their limited time spent playing an instrument was a barrier to feeling intrinsically motivated in band class, as described earlier in Chapter Four. Csikszentmihalyi (1990) stated that external motivation may be required as playing and practicing an instrument "requires a difficult restructuring of attention" (p. 68), especially for younger people.

When discrepancies exist in a mixed methods study, Creswell and Plano Clark (2011) recommended examining the methodology used in each strand of data collection and subsequent limitations, collecting more data in one or both strands, or viewing the discrepancies as a "springboard for new directions of inquiry" (p. 233). Slonim-Nevo

and Nevo (2009) described taking a complementary approach to dealing with conflicting results in a mixed methods study. A complementary approach allows researchers to "make credible and consistent sense of different aspects of their studies" (p. 111) as opposed to a noncomplementary approach in which researchers choose to eliminate one of the data strands to remove the discrepancy from the overall results. Adopting a complementary approach, I propose that the contradictory results in the mixed methods convergence in the present study stems from conceptualizing flow theory as the balance between challenge and skill in the quantitative data strand that was brought to light by the use of young adolescents for the sample.

As described earlier in Chapter Three, several variations exist in the literature as to how to create the flow dimension of the balance between challenge and skill so that it can be analyzed using quantitative methods (Hektner et al., 2007). In the present study, I adapted the absolute difference model (Moneta, 2012) in which the balance between challenge and skill was determined by calculating the absolute difference between the challenge rating and skill rating for each ESM response; results were then reverse coded for ease of interpretation in the HLM analysis. The mean DIFF variable score for this sample was 4.58 ($SD = 2.88$), meaning that students were rarely in flow as conceptualized by having a balance between challenge and skill. This result coupled with Mr. Anderson's awareness that he was not able to challenge every student within the structure of the curriculum may lead one to conclude that, indeed, students were bored or apathetic in class.

However, it was Lily's juxtaposition of her dismissal of the idea of challenge in her interview with her admittance of challenge in front of Mr. Anderson and her peers that provides an avenue for further exploration. Although the word *challenge* is frequently used to describe the level of a task and subsequently how this task aligns with a person's skills as part of flow theory (e.g., challenge and skill is in or out of balance), it may be that a young adolescent does not view the word *challenge* in this same way. Could it be that young adolescents are reluctant to admit to a challenge thus demonstrating a deficiency that may be noticed by their peers? Is it possible that Mr. Anderson's ability to scaffold learning (Wood, Bruner, & Ross, 1976) by carefully introducing harder levels of music to students may disguise challenges that might be perceived by students as being unattainable? Keller and Landhäußer (2012) proposed replacing the word *challenge* with the word *demand* when examining this dimension of flow. They also argued that perceived demands and skills should not be surveyed as two different constructs: "individuals have to take the demands of the task into account to arrive at an evaluation of their skills in the task (and vice versa)" (p. 54). Keller and Landhäußer recommended one possible example for future ESM use as, "please indicate whether the demands of the task you have been working on were too low, too high or matched with your skills" (p. 56), thus allowing researchers to better understand this subjective opinion by participants. However, Rheinberg (2008) argued that, regardless of the term used, if the concept of challenge or demand is "confused for any reason" by the participants, "findings might erroneously suggest that it is impossible to experience flow" (p. 340). If this occurred in the context of the present study, it may be a plausible

explanation as to why some predictor variables did not have statistically significant

relationships with the balance between challenge and skill DIFF variable, despite the fact

that qualitative data supported the opportunity for flow to occur in the eighth grade band.

The use of a young adolescent sample for this study may also provide a possible

reason for contradictions in the mixed methods results. Conclusions generated from the

qualitative data in this study support the idea that, not only do students move along a

continuum of musical development at different times, they may also move back and forth

along the continuum, exhibiting and experiencing flow behaviors one day but not the

next. Although Csikszentmihalyi argued that people of all ages and ability levels

experience flow, his research with student participants focused on high schools rather

than middle schools (or junior high schools). Researchers who study young adolescence

have argued for the last 30 years that middle school students are developmentally

different than high school students (e.g., Lipsitz, 1977; Mertens et al., 2007; Stevenson,

2002). Should results from flow research conducted with samples of high school students

be generalized to young adolescents? If middle school students tend to feel self-

conscious (Eccles et al., 1993) is it possible for them to experience the flow dimension of

having a loss of self-consciousness? Could the flow dimension of deep concentration be

difficult for middle school students to experience if the mind is a "battlefield" (Yair,

2000, p. 248) in which thoughts are competing for attention? Lounsbury and Clark

(1990) stated that middle school students may lack the "mental finesse" (p. 8) to regulate

their newly emerging developmental skills. At the very least, researchers should

acknowledge the potential of a having mismatch between their interpretations of data or a

teacher's interpretation of student behavior and middle school students' subjective perceptions of their own experiences (Doll et al., 2012).

It should be noted that using one school site for both the quantitative and qualitative data collections created limitations on the generalizability of the results. Although the sample size of the response level and student level data were considered sufficient for analyzing correlational data with hierarchical linear modeling (Hektner et al., 2007; Scherbaum & Ferreter, 2009), the quantitative results cannot be generalized beyond the band students at Harmony Middle School. In regards to the qualitative analysis, no attempt was made to generalize the results of the qualitative case study beyond Harmony Middle School; generalizability is left to the reader (Bresler & Stake, 1992).

Recommendations for Further Research

The intent of this study was to examine possible factors that may have an impact on flow experiences of students in a middle school instrumental music setting. A mixed methods design allowed me to gather both quantitative and qualitative data regarding flow through the Experience Sampling Method (ESM), observations, and interviews. In this study, the context of instrumental music teaching and learning at Harmony Middle School is unique to this school. The results provide information about the particular flow experiences of these particular students; further research would be needed to confirm or shed new light on flow experiences in other middle school band settings. Based on the results of the present study, a number of suggestions for further research are recommended.

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Recommendations for Quantitative Analysis

Alternative ways of presenting the concept of the flow channel, or the balance between challenge and skill, should be explored with different populations so that it can be measured empirically, help establish reliability and validity, and support the operationalization of flow theory. Keller and Landhäußer's (2012) suggestions described in the previous section provide one viable alternative that should be applied to future music education research related to flow.

The Experience Sampling Method (ESM) form developed for this study was purposely written to be as short as possible while still providing enough data in order to answer the quantitative research questions. This three-question ESM form did not seem to detract from normal classroom procedures suggesting that researchers could experiment with different lengths of ESM forms and different types of flow-related questions to suit their research interests. While using event-contingent sampling for ESM data collection seemed to work well for this sample, other types of signaling structures could be explored in the context of middle school classrooms as well.

The use of HLM to analyze ESM flow-related data was an innovative approach in the field of music education research, however the modeling in the present study was not very sophisticated. The predictor of Activity only accounted for 3% of the variance at the response level, meaning that there were more factors present from moment to moment that were not captured in the design of this study. Additional factors could be added at the response and person levels (Level 1 and Level 2, respectively) or a classroom or school level (Level 3) could be added in order to help explain some of the

variance in flow-related data as well as examine any cross-interaction effects between levels. These additional factors may include class type, socio-economic status, teachers' years of experience, the size of the instrumental music programs in different schools, or the percentage of the school population enrolled in instrumental music. The factor of class type with a sample of middle school students would allow researchers to compare ESM data across contexts in an attempt to replicate previous research that indicated high school students in art, music, and physical education classes tend to have more flow experiences than students in math, science, or reading classes (e.g., Chandler, 1987; Shernoff & Csikszentmihalyi, 2009).

The collection of student data in an ESM format also allows for longitudinal analysis, in "which a change process is expected to unfold" (Bolger & Laurenceau, 2013, p. 4) over time. Data collected over weeks, months, or years could measure any changes in perceived flow dimensions as musicians prepare for a concert, work towards a specific skill or goal, or age through a secondary band or orchestra program from middle school to high school. Kraus (2003) and Sinnamon et al. (2012) concluded that older musicians are more likely to experience flow than younger musicians, however their samples consisted of high school, undergraduate, and graduate students. More research with young adolescent samples is needed in order to compare flow experiences of musicians in a variety of age groups.

Recommendations for Qualitative and Mixed Methods Research

One concern that arose from the results of the study was that, despite my knowledge of the framework of flow, it was difficult to draw out flow experiences from

the qualitative data. My time spent in the field for the qualitative case study was limited; there were only eight classroom observations of the eighth grade band over the period of two months. Prolonged engagement in a middle school classroom can allow the researcher to develop stronger familiarity with the students and ascertain the qualities of an optimal learning environment in the context of a music setting.

Gathering rich, verbal descriptions of flow from students in middle school band could be used to test alternative survey items for measuring flow that are more developmentally appropriate for the young adolescent, as suggested earlier. This type of survey construction has been used for developing flow measurements; Jackson (e.g., 1996) used interviews with elite athletes to create the Core Flow Scale (Jackson et al., 2010). It would be possible to expand either the ESM sample or the qualitative case study to a multi-case study to further identify and examine the organizational construct of culture in these groups. Research with either more data points or more cases could either lend support to my conclusions or generate other plausible theories. Also, ESM data could be used with interview or focus group participants as a form of stimulated recall in an explanatory mixed methods design.

Implications for Music Education

In the context of a music classroom, the theory of flow is a complex model that attempts to explain why a student feels enjoyment in the present moment when engaging with music (e.g., performing, listening, composing) thus intrinsically motivating them to continue to engage with music. The goal of the present study was to examine potential factors that may contribute to or hinder flow experiences for students in a middle school

instrumental classroom, however the inconsistent results from the mixed methods analysis seem to provide few implications for practice in music education. Despite this, viewing the quantitative and qualitative results through the lens of organizational culture (Hatch, 1997) can provide both music educators and music teacher educators with suggestions for the profession.

The large ensemble, as a culture, has been called a "fascinating laboratory" (Marotto et al., 2007, p. 410) and a rare and unique entity when compared to non-music classes (Abril, 2013; Allsup, 2012). Adderley et al. (2003) concluded, after interviewing 60 high school students involved in band, choir, or orchestra that "students are intellectually, psychologically, emotionally, socially, and musically nurtured by membership in performing ensembles" (p. 204). Because large ensemble participation often begins in middle school, middle school teachers should realize the potential they have to nurture young adolescents in developing their artistic dispositions, aesthetic abilities, and analytic abilities through music (Eisner, 2002). As middle school teachers reflect on the personal values and beliefs that they bring to the creation of the classroom milieu, or band culture, they should also examine what values and beliefs their students bring as well.

One unexpected theme that emerged from the qualitative data was the rivalry with the other eighth grade band that rehearsed the same concert repertoire because the students performed as one collective group for public audiences. Mr. Anderson's use of the check mark system on the white board in the front of the classroom allowed students to regularly monitor their progress compared to the other class and students commented

regularly about whether they were "ahead" or "behind" the other class by the amount of check marks they had. This type of competition has negative relationships with social goals, perceived competency, and student engagement (Gonzalez-Cutre et al., 2009; Wang and Holcombe, 2010), which in turn may negatively affect flow. Scheib (2006) described how competition became the focal point for the student named Lindy in his case study of her experience in middle school band. Competition is one of many possible values and beliefs that music teachers can reflect upon in their practice to make informed decisions about the culture they want to create in their ensembles.

This journey of reflection can begin before undergraduate music education majors step into a classroom. Music teacher educators can help undergraduates examine their own assumptions and beliefs about music education that often bloom from the cultures cultivated by the undergraduates' past ensemble teachers (Broomhead, 2004). Concurrently, music teacher educators should also provide their students with opportunity to engage in philosophical study and discourse. Broomhead stated that philosophy provides the rationale behind the daily rehearsals and lessons that today's undergraduates will be teaching as tomorrow's music educators. As a theory, flow has a place in music education philosophy. Elliott (1995), Reimer (1995), and Swanwick (1999/2012) all argued that flow experiences should be the ultimate goal of music education, "encompassing yet transcending all other goals toward which a good music program aims" (Reimer, p. 16). Music teacher educators can help undergraduates articulate their own flow experiences and explore ways to promote flow in K-12

classrooms through lesson planning, examining case studies, and teaching during field experience.

Conclusion

The feeling of enjoyment is a subjective experience, one that is personal to each and every student in an ensemble or classroom. I return to a statement introduced in Chapter One by Reimer (1995): "music means so much to us [music educators] because it has moved us deeply, and I believe our zeal for music education stems, ultimately, from our desire to help others be so moved" (p. 16). Through this concentrated examination of what it means to conceive and design a study based on a theoretical concept, I have learned that flow is, indeed, multidimensional and multilayered. This study fills a gap in the existing literature by the mixing of a qualitative case study with a quantitative analysis of nested data in relation to flow and students' musical experiences, but it is only one small piece of the puzzle that is flow research. I feel Rheinberg (2012) summarized my personal conclusion about this journey well:

> one can hardly deny the existence of a state which is undoubtedly present in one's own experience. I believe that this indisputability of self-experienced flow was and is a first, and perhaps the most important, guarantor for flow to remain alive as an object of research." (p. x)

Continuing to understand how my students think, behave, and feel when engaging in music will always be a part of my teaching identity because of how I think, behave, and feel when engaging in music.

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APPENDIX A: IRB Approval

UNIVERSITY OF MINNESOTA

Twin Cities Campus

Human Research Protection Program
Office of the Vice President for Research

D528 Mayo Memorial Building
420 Delaware Street S.E.
MMC 820
Minneapolis, MN 55455

Office: 612-626-5654
Fax: 612-626-6061
E-mail: irb@umn.edu or ibc@umn.edu
Website: http://research.umn.edu/subjects/

10/02/2013

Casey J Clementson
School of Music 7811A
Room 100   FergH
2106 4th St S
Minneapolis, MN 55455

RE: "A Mixed Method Investigation of Flow Experience in the Middle Level instrumental
      Music Classroom"
      IRB Code Number: **1308P41961**

Dear Ms. Clementson:

The Institutional Review Board (IRB) received your response to its stipulations. Since this information satisfies the federal criteria for approval at 45CFR46.111 and the requirements set by the IRB, final approval for the project is noted in our files. Upon receipt of this letter, you may begin your research.

IRB approval of this study includes the parent consent letter version A and B, and the assent form, all received September 30, 2013.

The IRB would like to stress that subjects who go through the consent process are considered enrolled participants and are counted toward the total number of subjects, even if they have no further participation in the study. Please keep this in mind when calculating the number of subjects you request. This study is currently approved for 201 subjects. If you desire an increase in the number of approved subjects, you will need to make a formal request to the IRB.

For your records and for grant certification purposes, the approval date for the referenced project is September 13, 2013 and the Assurance of Compliance number is FWA00000312 (Fairview Health Systems Research FWA00000325, Gillette Children's Specialty Healthcare FWA00004003). Research projects are subject to continuing review and renewal; approval will expire one year from that date. You will receive a report form two months before the expiration date. If you would like us to send certification of approval to a funding agency, please tell us the name and address of your contact person at the agency.

As Principal Investigator of this project, you are required by federal regulations to inform the IRB of any proposed changes in your research that will affect human subjects. Changes should not be initiated until written IRB approval is received. Unanticipated problems or serious unexpected adverse events should be reported to the IRB as they occur.

The IRB wishes you success with this research. If you have questions, please call the IRB office at 612-626-5654.

Sincerely,

Christina Dobrovolny, CIP
Research Compliance Supervisor
CD/ks

CC: Laura Sindberg

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A Mixed Method Investigation of Flow Experience in the Middle Level Instrumental
Music Classroom

Background Information: Under the supervision of Dr. Laura K. Sindberg, Assistant
Professor of Music Education at the University of Minnesota, Casey Clementson, a
graduate student in Music Education is conducting research on students' attitudes and
beliefs about their participation in band class.

Dear Parent or Guardian:

Your son/daughter has been asked to participate in a research study. He/she is being
asked to participate in the study because they are a 7th or 8th grade student in the Twin
Oaks Middle School band program. The purpose of this study is to explore selected
factors that may impact a student's frequency of flow, or positive, experiences in band
class and how these positive flow experiences may relate to achievement and enjoyment
in band class.

If you agree for your child to participate in this research study, the following will occur
between October and December of 2013.

1. Your child will be asked to complete a survey of approximately 42 questions
    relating to how they feel about band class. Your child can answer anywhere on a
    scale of 1 (never) to 4 (always). Completing the survey should take about 20
    minutes and will occur during band class.
2. Your child will also be asked to complete a survey of three questions relating to
    how they felt about an activity in band class. Your child can answer anywhere on
    a scale of 1 (never, not at all) to 10 (always, all the time). This survey will be
    repeated multiple times over the course of two to eight class periods. Completing
    the survey should take about 1 minute each time and will occur during band class.
3. Your child's band teacher will also rate his/her performance skill on a scale of 1
    (low) to 4 (high).

All of the above information will be confidential and only the researcher, Casey
Clementson, will know this information. There will be no consequences if your child
chooses not to participate.

The potential risks for participation in this study are minimal, since the procedure
involves only responding to items on a survey. Results of this study may be used for
teaching, additional research, or publications. However, individual results of your child
will not be discussed. The records of this study will be kept private. Your child's name

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will not be used in the report and all files and data will be securely stored (password protected) on the researcher's computer.

Participation in this study is voluntary. Your child is free to choose not to participate in this research study and may decide to withdraw from the study at any time. Withdrawing from the study will not affect your child's grade in band, nor will it affect your current or future relations with the University of Minnesota or Casey Clementson.

The researcher conducting this study is Casey Clementson. If you have any questions you are encouraged to contact her via phone 612-816-0166 or email: clem0038@umn.edu. Or you may contact Dr. Laura K. Sindberg, Assistant Professor, School of Music, University of Minnesota via phone 612-624-0093 or email: lsindber@umn.edu

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, you are encouraged to contact the Research Subjects' Advocate Line at the University of Minnesota at 612-625-1650.

I have read this form and the research has been explained to me in writing. I have been given the opportunity to ask questions and my questions have been answered. If I have additional questions, I have been informed of whom to contact. I agree that my son/daughter may participate in the research study described above.

Parent/Guardian Name (Print):

_____

Parent/Guardian Signature:

_____

Child's Name (Print): _____Date: _____

Principal Investigator's Signature: _____ Date: _____

APPENDIX C: Parent Consent Letter – Qualitative

A Mixed Method Investigation of Flow Experience in the Middle Level Instrumental
Music Classroom

Background Information: Under the supervision of Dr. Laura K. Sindberg, Assistant
Professor of Music Education at the University of Minnesota, Casey Clementson, a
graduate student in Music Education is conducting research on students' attitudes and
beliefs about their participation in band class.

Dear Parent or Guardian:

Your son/daughter has been asked to participate in a research study. He/she is being
asked to participate in the study because they are an 8th grade student in the Twin Oaks
Middle School band program. The purpose of this study is to explore selected factors
that may impact a student's frequency of flow, or positive, experiences in band class and
how these flow experiences may relate to achievement and enjoyment in band class.

If you agree for your child to participate in this research study, the following will occur
between October and December of 2013.

1. Your child will be asked to complete a survey of approximately 42 questions
   relating to how they feel about band class. Your child can answer anywhere on a
   scale of 1 (never) to 4 (always). Completing the survey should take about 20
   minutes and will occur during band class.
2. Your child will also be asked to complete a survey of three questions relating to
   how they felt about an activity in band class. Your child can answer anywhere on
   a scale of 1 (never, not at all) to 10 (always, all the time). This survey will be
   repeated multiple times over the course of four to eight class periods. Completing
   the survey should take about 1 minute each time and will occur during band class.
3. Your child's band teacher will also rate his/her performance skill on a scale of 1
   (low) to 4 (high).
4. Your child **may** be asked by the band teacher to participate in an interview with
   the researcher to share their thoughts and feelings about band class. If selected,
   the interview would take approximately 15 minutes and would occur during band
   class or lessons/sectional time.

All of the above information will be confidential and only the researcher, Casey
Clementson will know this information. There will be no consequences if your child
chooses not to participate.

The potential risks for participation in this study are minimal, as your child will be
answering questions on a survey. If your child is asked to participate in an interview,
they may feel unsure if they do not how to answer a question. Your child would be
assured that there are no "right" or "wrong" answers to the questions and that they can

choose to not answer a question or stop the interview at any time. Results of this study may be used for teaching, additional research, or publications. The records of this study will be kept private. Your child's name will not be used in the report and all files and data will be securely stored (password protected) on the researcher's computer.

Participation in this study is voluntary. Your child is free to choose not to participate in this research study and may decide to withdraw from the study at any time. Withdrawing from the study will not affect your child's grade in band, nor will it affect your current or future relations with the University of Minnesota or Casey Clementson.

The researcher conducting this study is Casey Clementson. If you have any questions you are encouraged to contact her via phone 612-816-0166 or email: clem0038@umn.edu. Or you may contact Dr. Laura K. Sindberg, Assistant Professor, School of Music, University of Minnesota via phone 612-624-0093 or email: lsindber@umn.edu

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, you are encouraged to contact the Research Subjects' Advocate Line at the University of Minnesota at 612-625-1650.

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, you are encouraged to contact the Research Subjects' Advocate Line at the University of Minnesota at 612-625-1650.

I have read this form and the research has been explained to me in writing. I have been given the opportunity to ask questions and my questions have been answered. If I have additional questions, I have been informed of whom to contact. I agree that my son/daughter may participate in the research study described above.

Parent/Guardian Name (Print):
_____

Parent/Guardian Signature:
_____

Child's Name (Print):
_____Date: _____

Principal Investigator's Signature: _____ Date: _____

APPENDIX D: Student Assent Form – Quantitative

A Mixed Method Investigation of Flow Experience in the Middle Level Instrumental Music Classroom/Twin Oaks Middle School Student Form

Dear Student:

I would like to ask you to complete two surveys about your time spent in band class. I hope to learn what makes band class fun and challenging. Taking the surveys are your choice – your teacher will not be mad at you if you choose not to do them and your grade in band won't be affected, even if you change your mind later.

If you agree to take the surveys, they will take up portions of your band classes. You and your classmates will take the surveys at the same time. You will still have time during class to do your regular classroom activities with Mr. Melody. If you choose not to do the surveys you can read a book, sit quietly, or prepare for the next activity that Mr. Melody wants you to do.

You can ask any questions that you have about the surveys. If you have a question later that you didn't think of now, you can ask me at another time.

Signing here means that you have read this paper or had it read to you and you are willing to take the surveys. If you don't want to take the surveys, just don't sign below. Remember, being in this study is up to you, and no one will be mad at you if don't sign this or if you change your mind later.

Sincerely,

Casey Clementson
University of Minnesota

Print your name: _____

Sign your name: _____

Date: _____

APPENDIX E: Student Assent Form – Qualitative

A Mixed Method Investigation of Flow Experience in the Middle Level Instrumental Music Classroom/Twin Oaks Middle School Student Form

Dear Student:

I would like to ask you to complete two surveys about your time spent in band class. I hope to learn what makes band class fun and challenging. Taking the surveys are your choice – your teacher will not be mad at you if you choose not to do them and your grade in band won't be affected, even if you change your mind later.

If you agree to take the surveys, they will take up portions of your band classes. You and your classmates will take the surveys at the same time. You will still have time during class to do your regular classroom activities with Mr. Melody. If you choose not to do the surveys you can read a book, sit quietly, or prepare for the next activity that Mr. Melody wants you to do.

You can ask any questions that you have about the surveys. If you have a question later that you didn't think of now, you can ask me at another time.

In addition, Mr. Melody may ask you if you would like to participate in an interview to share your thoughts and feelings about band class. Participating in an interview is voluntary – you do not have to do it if you don't want to.   If you agree to let me interview you, but then later decide not to, that's okay.   Your teacher, again, will not be mad at you and your grade in band won't be affected. I will be glad to hear whatever you have to say, because it will help me understand how you feel about your experience in band.

Signing here means that you have read this paper or had it read to you and you are willing to take the surveys and participate in an interview, if asked to do so.

Sincerely,

Casey Clementson
University of Minnesota

Print your name: _____

Sign your name: _____

Date: _____

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ClassMaps [2007]

DIRECTIONS: THESE QUESTIONS ASK WHAT IS TRUE ABOUT YOUR CLASS. FOR EACH QUESTION, CIRCLE THE CHOICE THAT IS TRUE FOR YOU. NO ONE WILL KNOW WHAT YOUR ANSWERS ARE.

NAME: I AM A: BOY/MALE   OR   GIRL/FEMALE

Believing in Me

1. I can do my work correctly in this class,
   NEVER   SOMETIMES   OFTEN   ALMOST ALWAYS

2. I can do as well as most kids in this class.
   NEVER   SOMETIMES   OFTEN   ALMOST ALWAYS

3. I can help other kids understand the work in this class.
   NEVER   SOMETIMES   OFTEN   ALMOST ALWAYS

4. I can be a very good student in this class.
   NEVER   SOMETIMES   OFTEN   ALMOST ALWAYS

5. I can do the hard work in this class.
   NEVER   SOMETIMES   OFTEN   ALMOST ALWAYS

6. I can get good grades when I try hard in this class.
   NEVER   SOMETIMES   OFTEN   ALMOST ALWAYS

7. I know that I will learn what is taught in this class.
   NEVER   SOMETIMES   OFTEN   ALMOST ALWAYS

8. I expect to do very well when I work hard in this class.
   NEVER   SOMETIMES   OFTEN   ALMOST ALWAYS

My Teacher

9. My teacher listens carefully to me when I talk.
   NEVER   SOMETIMES   OFTEN   ALMOST ALWAYS

10. My teacher helps me when I need help.
    NEVER   SOMETIMES   OFTEN   ALMOST ALWAYS

11. My teacher respects me.
    NEVER   SOMETIMES   OFTEN   ALMOST ALWAYS

12. My teacher likes having me in this class.

| | NEVER | SOMETIMES | OFTEN | ALMOST ALWAYS |

13. My teacher makes it fun to be in this class.

| | NEVER | SOMETIMES | OFTEN | ALMOST ALWAYS |

14. My teacher thinks I do a good job in this class.

| | NEVER | SOMETIMES | OFTEN | ALMOST ALWAYS |

15. My teacher is fair to me.

| | NEVER | SOMETIMES | OFTEN | ALMOST ALWAYS |

Taking Charge

16. I want to know more about the things we learn in this class.

| | NEVER | SOMETIMES | OFTEN | ALMOST ALWAYS |

17. In this class, I can guess what my grade will be when I turn in my work.

| | NEVER | SOMETIMES | OFTEN | ALMOST ALWAYS |

18. I work as hard as I can in this class.

| | NEVER | SOMETIMES | OFTEN | ALMOST ALWAYS |

19. I find and fix my mistakes before turning in my work.

| | NEVER | SOMETIMES | OFTEN | ALMOST ALWAYS |

20. I learn because I want to and not just because the teacher tells me to.

| | NEVER | SOMETIMES | OFTEN | ALMOST ALWAYS |

21. When the work is hard in this class, I keep trying until I figure it out.

| | NEVER | SOMETIMES | OFTEN | ALMOST ALWAYS |

22. I know the things I learn in this class will help me outside of school.

| | NEVER | SOMETIMES | OFTEN | ALMOST ALWAYS |

23. I can tell when I make a mistake on my work in this class.

| | NEVER | SOMETIMES | OFTEN | ALMOST ALWAYS |

My Classmates

24. I have a lot of fun with my friends in this class.

| | NEVER | SOMETIMES | OFTEN | ALMOST ALWAYS |

25. My friends care about me a lot.

| | NEVER | SOMETIMES | OFTEN | ALMOST ALWAYS |

26. I have friends to eat lunch with and play with at recess.
     NEVER   SOMETIMES   OFTEN   ALMOST ALWAYS

27. I have friends that like me the way I am.
     NEVER   SOMETIMES   OFTEN   ALMOST ALWAYS

28. My friends like me as much as they like other kids.
     NEVER   SOMETIMES   OFTEN   ALMOST ALWAYS

29. I have friends who will stick up for me if someone picks on me.
     NEVER   SOMETIMES   OFTEN   ALMOST ALWAYS

Following the Class Rules

30. Most kids work quietly and calmly in this class.
     NEVER   SOMETIMES   OFTEN   ALMOST ALWAYS

31. Most kids in this class listen carefully when the teacher gives directions.
     NEVER   SOMETIMES   OFTEN   ALMOST ALWAYS

32. Most kids follow the rules in this class.
     NEVER   SOMETIMES   OFTEN   ALMOST ALWAYS

33. Most kids in this class pay attention when they are supposed to.
     NEVER   SOMETIMES   OFTEN   ALMOST ALWAYS

34. Most kids do their work when they are supposed to in this class.
     NEVER   SOMETIMES   OFTEN   ALMOST ALWAYS

35. Most kids in this class behave well even when the teacher isn't watching.
     NEVER   SOMETIMES   OFTEN   ALMOST ALWAYS

Talking With My Parents

36. My parents and I talk about my grades in this class.
     NEVER   SOMETIMES   OFTEN   ALMOST ALWAYS

37. My parents and I talk about what I am learning in this class.
     NEVER   SOMETIMES   OFTEN   ALMOST ALWAYS

38. My parents and I talk about my homework in this class.
     NEVER   SOMETIMES   OFTEN   ALMOST ALWAYS

39. My parents help me with my homework when I need it.
     NEVER   SOMETIMES   OFTEN   ALMOST ALWAYS

40. My parents and I talk about ways that I can do well in school.

NEVER   SOMETIMES   OFTEN   ALMOST ALWAYS

41. My parents and I talk about good things I have done in this class

NEVER   SOMETIMES   OFTEN   ALMOST ALWAYS

42. My parents and I talk about problems I have in this class.

NEVER   SOMETIMES   OFTEN   ALMOST ALWAYS

APPENDIX G: Permission To Use ClassMaps Survey

Request to use ClassMaps Survey

Beth Doll <bdoll2@unl.edu>
To: Casey Clementson <casey.clementson@gmail.com>

Mon, Aug 19, 2013 at 12:26 PM

Of course, you have my permission to use the scale. I am attaching the 2007 version, together with two more publications that might be helpful to you.

Beth Doll, Ph.D.

Associate Dean for Academic Affairs

Professor, Educational Psychology (School Psychology)

College of Education and Human Sciences

University of Nebraska Lincoln

238 Mabel Lee

(840 North 14th Street)

Lincoln, NE 68588-0234

PH (402) 472 2238

EMAIL bdoll2@unl.edu

From: Casey Clementson [mailto:casey.clementson@gmail.com]
Sent: Monday, August 19, 2013 12:10 PM
To: bjdoll@unlnotes.unl.edu
Cc: Laura Sindberg
Subject: Request to use ClassMaps Survey

[Quoted text hidden]

3 attachments

ClassMaps Surveys 2007.doc
93K

doll spies leclair kurien foley 2010.pdf
168K

Doll Spies & Champion 2012.pdf

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Experience Sampling Form – Harmony Middle School

Name: _____ Class/Band Hour: _____

TIME 1: Think about the activity that just ended. Circle the number below that best describes how you felt about what you were just doing.

	not at all									very much
1. How much did you enjoy the activity?	1	2	3	4	5	6	7	8	9	10

	not challenging at all									very challenging
2. How challenging was the activity?	1	2	3	4	5	6	7	8	9	10

	low ability									high ability
3. How would you rate your ability to do the activity?	1	2	3	4	5	6	7	8	9	10

TIME 2: Think about the activity that just ended. Circle the number below that best describes how you felt about what you were just doing.

	not at all									very much
1. How much did you enjoy the activity?	1	2	3	4	5	6	7	8	9	10

	not challenging at all									very challenging
2. How challenging was the activity?	1	2	3	4	5	6	7	8	9	10

	low ability									high ability
3. How would you rate your ability to do the activity?	1	2	3	4	5	6	7	8	9	10

TIME 3: Think about the activity that just ended. Circle the number below that best describes how you felt about what you were just doing.

	not at all									very much
1. How much did you enjoy the activity?	1	2	3	4	5	6	7	8	9	10

	not challenging at all									very challenging
2. How challenging was the activity?	1	2	3	4	5	6	7	8	9	10

	low ability									high ability

3. How would you rate your
ability to do the activity?
     1   2   3   4   5   6   7   8   9   10

TIME 4: Think about the activity that just ended. Circle the number below that best describes how you felt about what you were just doing.

	not at all									*very much*
1. How much did you enjoy the activity?	1	2	3	4	5	6	7	8	9	10
	not challenging at all									*very challenging*
2. How challenging was the activity?	1	2	3	4	5	6	7	8	9	10
	low ability									*high ability*
3. How would you rate your ability to do the activity?	1	2	3	4	5	6	7	8	9	10

TIME 5: Think about the activity that just ended. Circle the number below that best describes how you felt about what you were just doing.

	not at all									*very much*
1. How much did you enjoy the activity?	1	2	3	4	5	6	7	8	9	10
	not challenging at all									*very challenging*
2. How challenging was the activity?	1	2	3	4	5	6	7	8	9	10
	low ability									*high ability*
3. How would you rate your ability to do the activity?	1	2	3	4	5	6	7	8	9	10

TIME 6: Think about the activity that just ended. Circle the number below that best describes how you felt about what you were just doing.

	not at all									*very much*
1. How much did you enjoy the activity?	1	2	3	4	5	6	7	8	9	10
	not challenging at all									*very challenging*
2. How challenging was the activity?	1	2	3	4	5	6	7	8	9	10
	low ability									*high ability*
3. How would you rate your ability to do the activity?	1	2	3	4	5	6	7	8	9	10

APPENDIX I: Approval to Conduct Pilot Study

Gmail
by Google

U of M IRB Survey

Parr, Mark <Mark.Parr@district196.org>　　　　　　　　　　Thu, Oct 3, 2013 at 6:18 AM
To: Casey Clementson <casey.clementson@gmail.com>

Hi Casey:

Thank you for that information. Your study is approved. Best of luck in that endeavor.

Take care,

Mark Parr

From: Casey Clementson [casey.clementson@gmail.com]
Sent: Wednesday, October 02, 2013 10:49 PM
To: Parr, Mark
Cc: Thompson, Mary; Zschunke, John D
Subject: Fwd: U of M IRB Survey

Hi Mark,

This email is to inform you that my research study, A Mixed Method Investigation of Flow Experience in the Middle Level Instrumental Music Classroom, has been approved by the University of Minnesota's IRB. The notice that I received directly from IRB is below. It is a rather succinct notice, isn't it?

A friendly reminder that I only wish to pilot one section of my entire study with John Zschunke's students at RMS. It will be a three question survey that is administered to students at multiple times during the class period. Piloting it with John's students will allow me to practice the process and to learn about any questions or issues that may arise. The data from the pilot study will not be analyzed or published in the final product in any way.

When I receive approval from you, I will then contact John to confirm a date and time for my visits. Thank you for your support of research in the field of music education.

Regards,
Casey

--
Casey Clementson

Ph.D. Candidate - Music Education
University of Minnesota
clem0038@umn.edu
casey.clementson@gmail.com

---------- Forwarded message ----------
From: <irb@umn.edu>

Date: Wed, Oct 2, 2013 at 8:26 AM
Subject: U of M IRB Survey
To: clem0038@umn.edu

TO : lsindber@umn.edu, clem0038@umn.edu, Your study, 1308P41961 A Mixed Method Investigation of Flow Experience in the Middle Level instrumental Music Classroom, was recently approved by the U of M IRB.   We value feedback from the research community and have created a short survey that will only take a couple of minutes to complete. The questions are basic but your responses will help us better understand what we are doing well and areas that may require improvement. Thanks in advance for completing the survey.
http://tinyurl.com/nrjp72p
Thank you,
U of M IRB