UNIVERSITY OF OKLAHOMA

GRADUATE COLLEGE

AN INVESTIGATION OF STUDENT AND TEACHER FLOW EXPERIENCES IN THE COLLEGIATE GROUP PIANO CLASSROOM

A DISSERTATION

SUBMITTED TO THE GRADUATE FACULTY

in partial fulfillment of the requirements for the

Degree of

DOCTOR OF PHILOSOPHY

By

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Norman, Oklahoma
2016

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AN INVESTIGATION OF STUDENT AND TEACHER FLOW EXPERIENCES IN THE COLLEGIATE GROUP PIANO CLASSROOM

A DISSERTATION APPROVED FOR THE
SCHOOL OF MUSIC

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Dedicated to

Grandpa Tseng

ACKNOWLEDGEMENTS

There are many people who have inspired, supported, and invested in me throughout my doctoral degree. First, I would like to thank my committee members, Dr. Charles Ciorba, Dr. Barbara Fast, Dr. Jane Magrath, Dr. Marvin Lamb, and Dr. Teresa DeBacker. I would like to express my appreciation to Dr. Ciorba and Dr. Fast for their genuine support and constructive feedback while I completed the dissertation in California. I deeply appreciate all the email exchanges and conference calls. I would also like to express my sincere gratitude to Dr. DeBacker for her invaluable guidance, expertise, and mentorship. I thank Dr. Magrath for her heartfelt supervision. Her suggestion to examine Csikszentmihalyi's Flow Theory as a class research project ultimately evolved into my dissertation topic. I would like to acknowledge Dr. Jeongwon Ham. Although her name does not appear on this document, piano lessons with Dr. Ham has inspired me to be courageous in everything I do. I would also like to acknowledge Dr. Jennifer Snow for her continuous guidance since my undergraduate years at UCLA. I thank the participating teachers and students who graciously volunteered to partake in my study. I am very thankful for my close colleagues at University of Oklahoma, especially Heejin Jang for her collegial support and friendship. I am also grateful for my best friends from elementary school and for my cousins in the U.S. and Taiwan who continuously cheered me on. Many thanks go to Shelly Chang, Grace Kuo, and Kathy Lee for their detailed editorial remarks. I would like to specially thank Justin Hao Lee for his encouragement and eternal companionship. I also express my appreciation to the Lee family. Lastly, words cannot express how grateful I am for my parents and my younger brother for their unconditional love and support.

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ABSTRACT

The purpose of this study was to explore the flow experiences of group piano teachers and their students, as well as determine the relevance of specific classroom conditions on the flow experiences in the collegiate group piano classroom. A sample of group piano teachers ($N = 3$) and their students ($N = 32$) participated in this research. Data were collected using the Experience Sampling Method. Data calculated from the Experience Sampling Forms indicated that teachers and students experienced flow in the collegiate group piano classroom, although teacher flow scores were slightly higher than the student flow scores. Also, the flow patterns between student and teacher flow scores did not coincide in a consistent manner. Results of the correlation analyses indicated significant positive correlations between student flow scores and (a) pacing of activity, (b) perceived level of teacher observation, and (c) perceived level of teacher enjoyment. The perceived level of student observation revealed significant negative correlations with teacher flow scores. The investigation showed the majority of participants across all three classrooms experienced a greater level of flow toward the middle and end of the lesson, and the overall levels of flow were greater earlier in the week. It is hoped this study and future research will facilitate improved characterization of the conditions conducive to flow achievement in the collegiate group piano classroom and increase the quality of teaching and learning experiences for both students and teachers.

Chapter I

Introduction

Since the rapid development of group piano instruction in the 1950s, the instructional goal for group piano teachers has remained "to stimulate musical growth in an enjoyable and challenging manner" (Richards, 1962, p. 109). This goal, while simple to state, can often be elusive to achieve. Group piano instructors aspire to enhance musical growth and enjoyment in their students but various complex dimensions exist within the teaching and learning process (Burkett, 1982; McKoy, Butler, & Lind, 2010; Richards, 1962; Wristen, 2006). Previous research has identified common instructional challenges group piano instructors have faced through the generations. These challenges often lie beyond the curriculum itself and can include (a) motivating students to practice (Kim, 2000; Tsai, 2007), (b) understanding the teacher's role in the teaching and learning process (Skroch, 1991), and (c) meeting individual needs in a group instructional setting (Richards, 1962).

Examining the quality of experiences in the group piano classroom as well as investigating factors that may impact the teaching and learning process could prove beneficial to students and teachers. Csikszentmihalyi's flow theory (1975) has been widely applied in diverse disciplines as a method to recognize and understand personal growth and enjoyment in many contexts. In addition, numerous researchers have investigated flow theory in various educational environments. However, an investigation of flow achievement in the college group piano classroom has yet to be conducted. The results of such a study may help educators to establish enjoyable and productive musical learning experiences for all group piano students.

Flow Theory

Flow theory involves the psychology of optimal experience. According to Csikszentmihalyi (1990), achieving flow during a given activity can lead one to a state of enjoyment. When in flow, one is able to fully focus and concentrate on an attainable task. Even when the task is difficult, a person experiencing flow has a sense of control over his or her actions. This person is acting based on previous knowledge and skill and is not worrying about failure. In addition, there is a loss of self-consciousness and perception of time. In the end, the experience becomes its own reward, and satisfaction comes from the enjoyment of the activity.

When combined, the following essential elements enable one's performance to evolve into a flow experience: (a) clear goals and rules, (b) immediate and relevant feedback, and (c) the absolute balance between challenges and skills (Csikszentmihalyi, 1990). A flow experience usually occurs when the mind or body is pushed to its limits through deliberate efforts to accomplish a difficult, yet worthwhile task (Sobel, 1995). One must experience complexity and struggle when developing the appropriate skills to undertake challenges in any situation. The process of setting goals, receiving feedback, and balancing challenges and skills requires constant adjustment. Furthermore, entering the flow state involves detailed planning and focused efforts. Previous research suggests that people perform their best when they achieve flow.

Experience Sampling Method. Prescott, Csikszentmihalyi, and Graef (1976) developed the Experience Sampling Method (ESM) to measure flow experiences under various circumstances. This method employs a systematic procedure to measure an individual's at-the-moment experience in any type of context. In early tests of this

procedure, participants wore electronic paging devices and completed Experience Sampling Forms (ESF) when randomly alerted throughout the day. Participants were asked to describe (a) where they were, (b) what they were doing, (c) who was with them, (d) how they felt, (e) their concentration level, (f) the challenge of the activity, and (g) how they were meeting the challenge. Many researchers have found success when using the ESM to measure the quality of experience, motivation, and engagement among students and teachers in academic and music related settings (Csikszentmihalyi & Larson, 1984; Csikszentmihalyi, Rathunde, & Whalen, 1993; Di Bianca, 2000; Jaros, 2008; Kraus, 2003; Parente, 2011; Rathunde & Csikszentmihalyi, 2005; Shernoff et al., 2003; Zhu, 2001).

Nine dimensions of flow. Based on results derived from the original ESM, Csikszentmihalyi classified the following nine dimensions of flow: (a) balance between perceived skills and challenges, (b) merge of action and awareness, (c) clear goals, (d) immediate feedback, (e) intense concentration on the present, (f) sense of control, (g) loss of self-consciousness, (h) distorted perception of time, and (i) the activity becomes *autotelic* (i.e., worth doing for its own sake).

Jackson and Marsh (1996) utilized the nine dimensions of flow to develop the Flow State Scale (FSS). The FSS utilizes 36 items (four items for each of the nine dimensions), and each item is aligned with the following 5-point Likert-type scale: (1) *Strongly Disagree*, (2) *Disagree* (3) *Neither,* (4) *Agree,* and (5) *Strongly Agree*. For their 1996 study, Jackson and Marsh used the FSS to examine the experiential state of people engaged in sports and physical activities. Participants completed the Flow State Scale after the physical activity to minimize distractions during the event. Jackson and

Eklund (2004) further developed the FSS into the Flow State Scale-2 (FSS-2) and Dispositional Flow State Scale-2 to assess flow experiences of a specific event. Although the FSS and FSS-2 were originally applied to sports settings, several researchers have modified the Flow State Scale to fit the needs of other physical activities such as teaching and learning (Hill, 2004; Jaros, 2008; Montanez, 2011).

Flow Experiences in the Classroom

Researchers have investigated personal and environmental variables that could impact the flow experiences of students and teachers in the academic classroom using the Experience Sampling Method (ESM).

Student flow experiences in the classroom. Researchers have explored the classroom flow experiences of elementary school students (Turner et al., 1998), middle school students (Csikszentmihalyi & Larson, 1984; Rathunde & Csikszentmihalyi, 2005), high school students (Csikszentmihalyi, Rathunde & Whalen, 1993; Shernoff & Csikszentmihalyi, 2003), and undergraduate college students (Peterson & Miller, 2004). It was determined students were most likely to achieve flow when (a) activities were highly structured (Csikszentmihalyi & Larson, 1984), (b) instructions were perceived as relevant (Peterson & Miller, 2004; Shernoff & Csikszentmihalyi, 2003), (c) the pacing of the activities were based on students' abilities (Csikszentmihalyi, Rathunde, & Whalen, 1993; Turner et al., 1998), and (d) class activities were student-centered and the curriculum was flexible (Rathunde & Csikszentmihalyi, 2005). Students who achieved flow in the general education classroom tended to be engaged in the content and enjoyed the learning process (Csikszentmihalyi & Larson, 1984; Csikszentmihalyi,

Rathunde, & Whalen, 1993; Peterson & Miller, 2004; Rathunde & Csikszentmihalyi, 2005; Shernoff & Csikszentmihalyi, 2003; Turner et al., 1998).

Teacher flow experiences in the classroom. While many researchers have analyzed instructional variables that impact the quality of student experiences in the classroom, several researchers have also studied the flow experiences among teachers in various academic settings. Previous studies have investigated the classroom flow experiences of (a) middle school teachers (Caouette, 1995; Salanova, Bakker, & Llorens, 2006), (b) high school teachers (Caouette, 1995; Gunderson, 2003), (c) student teachers (Chang, 1996), (d) college faculty (Hill, 2004), (e) creative public school teachers (Cartwright, 2006), and (f) teachers employed at large urban school districts who taught various grade levels (Frase, 1998). The specific variables influencing teacher flow experience in the classroom included (a) the teachers' perception of students in flow (Caouette, 1995), (b) flexibility in their teaching (Chang, 1996), (c) their connection to student engagement (Frase, 1998), (d) teacher self-efficacy and perceived efficacy of other teachers (Bason & Frase, 2004), and (e) support from co-workers and school administrators (Salanova, Bakker, & Llorens, 2006). Results showed highly effective teachers, and teachers who experience flow during instruction, were able to compel students to be more engaged and motivated in the learning process (Caouette, 1995; Gunderson, 2003).

Flow Experiences in the Music Classroom

In the music classroom, researchers have explored flow experiences among (a) young children (Custodero, 1997), (b) instrumental music students (Cassie, 2011;

Kraus, 2003; Montanez, 2011; Rybak, 1995/1996), (c) choir students (Freer, 2008; Jaros, 2008), and (d) piano students (Parente, 2011). Elliot (1995) highlighted music students could achieve flow experience when meeting specific musical challenges through practice. Furthermore, Csikszentmihalyi (1991) stated a teacher who understands the conditions of flow knows how to motivate people and is able to turn any activity into a flow experience.

Student flow experiences in the music classroom. A number of research studies have been devoted to the investigation of flow in the music classroom. Several researchers have adapted the Experience Sampling Form (Prescott, Csikszentmihalyi, & Graef, 1976) and Flow State Scale (Jackson & Marsh, 1996) when developing the (a) Flow Indicators in Musical Activities (Custodero, 1997), (b) Adult Leisure Music Experience Scale (Rybak, 1995/1996), and (c) Choral Singing Experience Sampling Forms (Jaros, 2008). Results have shown the following variables impacted or predicted student flow experiences in the music classroom: (a) pacing of activity (Custodero, 1997), (b) instructional format such as group vs. individual work (Custodero, 1997; Freer, 2008; Kraus, 2003), (c) specific instructional methods such as Phrases of Learning and spiral curriculum (Freer, 2008; Parente, 2011), (d) seating arrangement (Cassie, 2011), (e) repertoire selection (Jaros, 2008; Rybak, 1995/1996), (f) time segment of class (Jaros, 2008), and (g) years of playing music and hours spent practicing per week (Montanez, 2011). Parente (2011) concluded students who experienced flow during music class were more likely to engage in music practice outside of the classroom.

Teacher flow experiences in the music classroom. While the majority of research examining flow in the area of music education has been focused on students' experiences, several researchers have studied teachers' flow experiences when working with music students in a group setting (Custodero & Stamou, 2009; Jondrow, 2001). Jondrow (2001) explored the characteristics of an exceptional student teacher and the conditions that allowed for flow experiences while teaching. Data revealed the student teacher (a) focused on the students, (b) concentrated on the objectives of the rehearsal and provided clear instructions, (c) treated all students equally, and (d) understood the learning needs of high school choir students. The teacher clearly experienced flow while teaching, and the students responded positively to her passion and dedication to music.

Custodero (1997) explored the use of the Flow Indicator of Musical Activity (FIMA) form as a pedagogical tool for music teachers to determine student enjoyment (Custodero & Stamou, 2006). The teachers were able to change their own behavior and instructional approach in the classroom by intently observing students' behaviors and expressions. This resulted in positive student outcomes, which suggested a more optimal learning environment.

Student and Teacher Flow Experiences in the Classroom

Several studies have addressed the connection between teacher flow and student engagement (Caouette, 1995; Di Bianca, 2000; Zhu, 2001). Di Bianca (2000) focused on instructional style when examining the relationships between teacher flow and student engagement in a public school setting. Results showed student engagement

increased when (a) tasks were challenging, (b) students were given options, (c) materials covered in class were relevant to situations that occurred outside of school, (d) students interacted with others, and (e) tasks were perceived as enjoyable. Findings also indicated teachers in control of instruction might be in flow, however, students in the classroom did not necessarily experience flow if the instructional style was teacher-centered.

In a similar study, Zhu (2001) investigated the relationship between teachers' flow experiences and students' cognitive engagement in the academic classroom. Contrary to the results presented by Di Bianca (2000), Zhu (2001) indicated students reported being more cognitively engaged when teachers were in flow. Bakker (2005) explored flow experiences among music teachers and their students, as well as job resources that could affect teacher flow. It was found that higher frequencies of flow experiences reported by the music teachers resulted in higher frequencies of flow experiences reported by the students. These findings suggest flow experiences may crossover from teachers to students. This crossover phenomenon is also supported by the emotional contagion theory (Hatfield, Cacioppo, & Rapson, 1994).

In summary, researchers have found relevance in using the Experience Sampling Method to examine the quality of learning experiences. These results have shown flow experiences involved high levels of consistent exertion toward developing skills necessary to meet the challenges of a given situation (Custodero, 1997; Jaros, 2008; Kraus, 2003; Montanez, 2011; Parente, 2011). Variables that influenced flow experiences among music students included (a) instructional strategies that provided students the sense of control (Custodero, 1997; Freer, 2008; Parente, 2011) and (b) class

environment (Montanez, 2011). For teachers, flow experiences may occur as a result of their (a) relationships with students and (b) perceptions of student feedback (Basom & Frase, 2004; Caouette, 1995; Cartwright, 2006; Chang 1996; Frase, 1998; Gunderson, 2003; Salanova, Bakker, & Llorens, 2006).

Need for the Study

Group piano instructors strive to create the optimal learning environment necessary to foster musical growth in their classrooms. As such, a need exists to understand the quality of student-teacher experiences and interactions in the group piano classroom. A significant amount of research has studied factors that influence flow experiences among students in the general classroom and various areas of music education. However, research addressing flow achievement among teachers as well as students in the collegiate group piano environment remains sparse. A need exists to methodically examine the flow experiences of students and teachers in the collegiate group piano classroom.

Purpose of the Study

The purpose of this study was to explore the flow experiences of group piano teachers and their students, as well as determine the relevance of specific classroom conditions on the flow experiences in the collegiate group piano classroom. It is hoped the results of this study can (a) better characterize the conditions conducive to flow achievement in the collegiate group piano classroom and (b) increase the quality of the teaching and learning experience for both students and teachers.

Research Questions

1. Are there significant differences in flow scores across instructional formats?
2. Is there a relationship between flow scores and (a) pacing of activity, (b) perceived level of observation, and (c) perceived level of engagement?
3. Is there a relationship between teacher flow scores and student flow scores?
4. Do teacher and student flow scores rise and fall in a regular manner through the course of a lesson?
5. Do any of the following variables predict student flow scores: (a) school level, (b) music major, (c) prior musical experience, and (d) frequency of practice?
6. Do any of the following variables predict teacher flow scores: (a) degree level, (b) class size, and (c) lesson planning?

Definition of Terms

- **Group piano instruction**: "piano instruction in which a number of students (approximately six to 24) meet together regularly under the tutelage of an instructor for the purpose of performing certain assigned repertoire, technique, and related materials" (Pace, 1978, p. 1).
- **Perceived level of observation**: one's sense of another person's level of attention and observation. For example, a student's level of observation of the teacher's instructions, or a teacher's level of observation of the student's progress.
- **Group piano classroom**: a setting that includes a teacher keyboard and multiple student electric keyboards.

- **Flow theory**: a form of positive psychology that describes optimal experiences in an activity where one is completely absorbed in what one is doing and seeks enjoyment in the process of the activity (Csikszentmihalyi, 1990).
- **Flow**: a mental state when one is able to fully focus on a doable task with a sense of control over one's actions, and to enact knowledge and skill while sensing a loss of self-consciousness and perception of time (Csikszentmihalyi, 1990).
- **Nine dimensions of flow**: the dimensions that characterize a person's flow experience are (a) challenge-skill balance, (b) merge of action and awareness, (c) goal clarity, (d) feedback clarity, (e) concentration, (f) sense of control, (g) loss of self-consciousness, (h) transformation of time, and (i) autotelic experience; the activity became worth doing for its own sake (Csikszentmihalyi, 1990).

Chapter II

Review of Literature

The purpose of this study was to explore the flow experiences of group piano teachers and their students, as well as determine the relevance of specific classroom conditions on the flow experiences in the collegiate group piano classroom. This chapter reviews previous literature related to (a) flow theory, (b) flow experiences in the academic classroom, (c) flow experiences in the music classroom, and (d) the relationship of flow between students and teachers. This chapter also highlights the conditions and variables that could impact the flow experiences of students and teachers.

Flow Theory

Flow theory involves the psychology of optimal experience. Research in flow theory began in the early 1970's when the Public Health Service funded Csikszentmihalyi to develop a new method for researching the quality of experiences in work and play. The goal was to create a new model for understanding creativity and enjoyment (Csikszentmihalyi & Gruenberg, 1970). The first step involved pilot interviews among a sample of people ($N = 60$) who participated in activities for the sake of enjoyment rather than for the external rewards (e.g., monetary, fame, or praise). Participants included reputable mountain climbers, collegiate soccer players, and world champion swimmers. Emergent themes from these interviews were then used to (a) develop an experience-sampling questionnaire and (b) make improvements to the original interview script.

For the follow up study (Csikszentmihalyi, 1975), participants ($N = 173$) representing diverse fields were asked to describe their quality of experiences in work, life, and other activities by completing the experience-sampling questionnaire and participating in a structured interview. This diverse group of participants included (a) females and males, (b) beginners and experts, and (c) high school students and adults. The sample included athletes, musicians, dancers, rock climbers, and chess players. Through inductive analysis of these interviews, Csikszentmihalyi began to generate flow theory. The theory provided the key components that can make any activity enjoyable. Examples of interview quotes below summarize the experiences of those who engaged in flow-producing activities (Csikszentmihalyi, 1975):

> When a dance performance is going well, "your concentration is very complete, your mind isn't wandering, you are not thinking of something else; you are totally involved in what you are doing. Your body feels good. You are not aware of any stiffness. Your energy is flowing very smoothly. You feel relaxed, comfortable, and energetic." (p. 39)

> When composing music, "I am really quite oblivious to my surroundings after I really get going. I think that the phone could ring, and the doorbell could ring, or the house burnt down, or something like that . . . When I start working, I really do shut out the world. Once I stop, I can let it back in again." (p. 41)

Results further indicated the following major conditions were necessary to achieve the flow state: (a) clear goals every step of the way so one knew what to do at the next moment, (b) immediate feedback to one's actions through external sources or self-reflection so one knew how well he or she was doing, and (c) a balance between perceived skills and challenges where personal skill matched a specific challenge. With these conditions satisfied, one is able to experience the six flow characteristics: (a) merging of action and awareness; (b) intense concentration on the present; (c) sense of composure while acting out knowledge and skill; (d) loss of self-consciousness as all

concentration and focus was directed on the task; (e) the perception that time was distorted; and (f) the activity became *autotelic*, or worth doing for its own sake (Csikszentmihalyi, 1990).

> Flow is a subjective state that people report when they are completely involved in something to the point of forgetting time, fatigue, and everything else but the activity itself…The defining feature of flow is intense experiential involvement in moment-to-moment activity. Attention is fully invested in the task at hand, and the person functions at his or her fullest capacity. (Csikszentmihalyi, Abuhamdeh, & Nakamura, 2005, p. 600)

Nine dimensions of flow. By 1990, Csikszentmihalyi expanded his theory by identifying the nine dimensions of flow: (a) balance between perceived skills and challenges, (b) merge of action and awareness, (c) clear goals, (d) immediate feedback, (e) intense concentration on the present, (f) sense of control, (g) loss of self-consciousness, (h) distorted perception of time, and (i) the activity becomes *autotelic*, or worth doing for its own sake.

A person who attains enjoyment in any given activity can experience the nine dimensions of flow, although optimal flow experiences are usually attained through activities that are complex and challenging. In order to achieve flow, a balance is required between one's skills and the perceived challenges. Furthermore, successful achievement requires skill development, time investment, effort, and practice. According to Csikszentmihalyi (1975), the challenges are opportunities provided by the environment, and the skills represent one's capabilities at the moment.

Any experience within the flow channel is considered enjoyable but it requires a certain level of skill to match the level of complexity in the activity. Thus, there are various levels of flow experience. A person with low skills engaged in opportunities of low challenges could achieve flow but the quality of flow is much greater for someone

who has advanced skills and can undertake more complex challenges. Experiences outside the flow channel are considered less enjoyable. For instance, when a person with a low skill level is given a challenge that is too difficult, feelings of worry and anxiety can occur. Under these circumstances, a person may experience a type of focused concentration that is not the same as when one is balanced and in flow. At the other extreme, one may experience boredom when his or her skill level is much higher than the level of opportunity or challenge. The balance between challenge and skill requires constant adjustment as the perception of difficulty changes when skills improve.

People who are aware of the challenges in their environment and know how to handle the task are able to enter and re-enter flow in any given situation. Teachers who have the ability to assess students' skill levels and assign appropriate opportunities or challenges could help students experience flow. For example, when a music teacher is working with a beginner or novice student, the student's skill level should be assessed accordingly. In turn, the teacher would choose work suitable for that student. If the assigned musical challenges (e.g., easy pieces of music) match the student's perceived skill level, the student may find learning the piano enjoyable and continue to attend weekly lessons.

If the teacher continued to assign easy pieces of music as the student's skill level increases, boredom could occur, as the music becomes less challenging to the student. The opposite is also true. If the teacher introduces repertoire beyond the student's skill level and fails to recognize the pieces are too challenging, the student may experience anxiety. Furthermore, if the instructor does not teach the student how to practice a

challenging piece of music, the student may remain in a state of anxiety. If this is the case, the student may decide to quit playing piano due to frustration or dissatisfaction.

In both cases, if the teacher recognizes the student's music learning experience is outside the flow channel, the teacher can either assign a work that fits the student's developed abilities or provide supplementary exercises to develop specific skills to play the more challenging repertoire. The quality of flow increases as the challenges and skills become more complex. As a result, there is a greater level of growth and opportunity for the actualization of human potential (Csikszentmihalyi & Larson, 1984). In a group piano setting, one of the greatest challenges for teachers is to assess individual skills, assign appropriate activities, and teach the class as a group.

Experience Sampling Method. The Experience Sampling Method (ESM) is a systematic approach for measuring an individual's at-the-moment experience in any type of context. Prescott, Csikszentmihalyi, and Graef (1976) used the results of Csikszentmihalyi's 1975 study to further develop and test the Experience Sampling Form (ESF). The Experience Sampling Form (ESF) was designed to measure cognitive and affective states. The statements and questions that comprised the measure were related to the nine elements of flow experience. The first section consisted of open-ended questions regarding participants' location and activity at the moment. The second set identified the reason for the activity. The next group of questions was designed to measure a person's interaction with the environment using a 10-point scale ranging from low to high. In addition, participants rated their mood and physical state (i.e., happy – sad, hostile – friendly) using a 7-point scale.

A sample of 20 professionals (10 women and 10 men between the ages of 20 to 42) wore electronic paging devices and were randomly signaled five to eight times per day between 8:00 a.m. and 11:00 p.m. for one year. When alerted, the participants completed the Experience Sampling Forms (ESF) and described (a) where they were, (b) what they were doing, (c) who was with them, (d) how they felt, (e) their concentration level, (f) the challenge of the activity, and (g) how they were meeting the challenge.

Results revealed that age, gender, and environment (e.g., home, work, recreation, and transportation) had a significant impact on the participants' daily life experiences (Prescott, Csikszentmihalyi, & Graef, 1976). For instance, older professionals enjoyed being at work, while younger respondents preferred home and recreational settings. Younger women were more alert than younger men at work and at home. Younger men reported to be more friendly at home than at work, whereas younger women were more friendly at work than at home. Older women were more relaxed at work than at home, and they were more alert at work than older men. These findings suggested life experiences at work, home, in recreation, and in transit shifted with age, and men and women experienced the same types of settings differently.

Moreover, the ESF proved to be a reliable measure for describing a person's cognitive and affective states in various environments over an extended period of time. Since the development of the Flow Model and the Experience Sampling Method (ESM), researchers from various cultures and disciplines have studied the quality of experiences of people in multiple contexts such as education, work, sports, and recreation. Massimini, Csikszentmihalyi, and Delle Fave (1988) examined the

experiences of people representing various disciplines and cultures. Throughout the course of three years, 636 participants (255 males and 381 females) ranging in age from 14 to 86 and representing various socioeconomic statuses and cultures (i.e., Northern Italy, Bangkok, Thailand, Arizona, and United States), identified over 500 flow-producing activities. Participants ranged from white-collar workers, students, cave explorers, dancers, and former drug addicts. All participants completed the Flow Questionnaire (Flow Q), and responded to open-ended questions, which asked participants to address their own flow experiences (e.g., "How does the experience start?", "What keeps it going, once it starts?", and "How does it feel?").

Findings revealed several main categories that assisted flow experiences: (a) the activity itself (40%), (b) concentration (13%), (c) challenges (9%), (d) intrinsic motivation (9%), (e) positive moods and environment (7%), (f) skills (6%), (g) positive feedback (3%), and (h) growth in the complexity of the self (2%). The continuation of flow experience was maintained by (a) the activity itself (26%), (b) growth of complexity (13%), (c) intrinsic motivation (12%), (d) environment (11%), (e) positive mood (11%), (f) skills (10%), (g) concentration (6%), (h) challenges (4%), and (i) positive feedback (4%).

It is noted the environment was included as a new variable for study. The subcategories of the environment variable included (a) an absence of distractions, (b) having the right amount of time to complete a task, (c) the right environment, and (d) an interpersonal atmosphere. Although environmental factors were not specifically examined in preliminary studies, results indicated that it represented an important dimension of flow experience (Massimini, Csikszentmihalyi, & Delle Fave, 1988).

Emergent motivation. The interaction between an individual and the environment can lead to emergent behaviors. When a person experiences flow during an activity that is based on the conditions of the environment, emergent motivation evolves as a result of these interactions (Csikszentmihalyi, 1985).

> It is commonly reported, for instance, that a person is at first indifferent or bored by a certain activity, such as listening to classical music or using a computer. Then, when the opportunities for action becomes clearer or the individual's skills improve, the activity begins to be interesting and, finally, enjoyable. It is in this sense that the rewards of these types of intrinsically motivating activities are "emergent" or a priori unpredictable. (Csikszentmihalyi, Abuhamdeh, & Nakamura, 2005, p. 603)

Emergent motivation is acquired through achieving goals and developing skills that are provided by opportunities for the individual. For instance, students who are self-motivated to learn may enter the flow state more easily during class. However, other students could also have the opportunity to experience flow if teachers (a) establish clear goals, (b) assign suitable activities for skill development, and (c) adapt to student needs in any given classroom environment.

Flow Experiences in the Classroom

The experience of flow has shown to be an effective motivating force. Experts in positive psychology indicated that people learn more effectively when in flow (Csikszentmihalyi, 1991; Csikszentmihalyi, 1997; Csikszentmihalyi, Abuhamdeh, & Nakamura, 2005; Nakamura & Csikszentmihalyi, 2003; Nakamura & Csikszentmihalyi, 2005; Shernoff & Csikszentmihalyi, 2009). People can enter flow when they feel the environment allows them to (a) make mistakes, (b) self-evaluate, and (c) take challenges and critiques as a way to maintain self-growth. Using the Experience

Sampling Method, many researchers have investigated personal and environmental variables that could impact students' and teachers' quality of experience in the classroom (Csikszentmihalyi & Larson, 1984; Csikszentmihalyi, Rathunde, & Whalen, 1993; Peterson & Miller, 2004; Rathunde & Csikszentmihalyi, 2005; Shernoff et al., 2003; Turner et al., 1998).

Student flow experiences in the classroom. Csikszentmihalyi and Larson (1984) used the Experience Sampling Method to investigate the quality of daily life experiences of high school teenagers (N = 70). Participants were stratified based on gender, socioeconomic status, and grade level. Results showed that participants spent 41% of their day at home, 32% in school, and 27% in public. When in class, 26% of their time was spent studying, 17.8% listening to the teacher, 7.1% taking tests, and 5.2% participating in group work and discussions. Most students reported feeling bored, irritable, and unable to concentrate in class, especially during passive activities such as listening to a lecture. Students were most active and satisfied when engaged in (a) group work, (b) discussions, and (c) activities that involved actual participation (e.g., music, industrial arts, and physical education). It was also discovered that teachers' instructional strategies had a significant impact on students' attention. In addition, students were more engaged when a teacher was intrinsically motivated toward the subject. Effective teachers connected with students on a group level and a personal level.

Csikszentmihalyi, Rathunde, and Whalen (1993) utilized the Experience Sampling Method (ESM) to conduct a longitudinal study with a select sample of exceptional students (N = 208). Teachers nominated each participant according to their

talents in art, athletics, mathematics, music, and science. The researchers examined students' personalities, family contexts, and school contexts that created conditions for flow. Results indicated that students were open to experiences that stimulated their curiosity. Students also exhibited traits of endurance and ambition, which fostered achievement. The following family contexts helped to promote flow experiences for students: (a) clarity of goals and expectations from parents, (b) parental feedback that reflected genuine parental interests, (c) parental support that allowed the child to feel in control of his or her choices, and (d) a high comfort level to concentrate on tasks.

When in class, talented teenagers described teachers' strategies and characteristics that established positive and engaging academic experiences. Participants stated that effective teachers (a) shared genuine enthusiasm toward the subject matter, (b) avoided placing emphasis on extrinsic motivation (e.g., grades), (c) paced classroom activities based on students' abilities, (d) knew when to provide challenges and review concepts, (e) treated mistakes as learning opportunities, and (f) provided relevant feedback. Teachers who were able to facilitate flow experiences in class created optimal environments for students to enjoy the learning process among a variety of subjects.

A longitudinal study conducted by Shernoff et al. (2003) examined the manner in which a sample of high school students (N = 526) experienced various types of classroom activities. Using the Experience Sampling Method (ESM), the researchers identified activities that provided students with the opportunities for effective learning. Results indicated that 23% of classroom time was devoted to doing individual work, 21% to listening to lectures, 9% to class discussion, and 6% to group projects.

Listening to lectures and watching videos produced minimal engagement and participation while individual and group work (i.e., cooperative learning activities) provided greater opportunities for active learning. Results showed that student engagement increased when (a) the level of challenge and perceived skills were balanced, (b) the activity and instructions were relevant to students' goals, and (c) the learning environment was student-centered. Student classroom experiences were more positive when the instructor (a) applied the conditions of flow and (b) tailored the curriculum to the needs of the students.

Turner et al. (1998) explored the relationship between the level of classroom involvement among a sample of fifth and sixth grade math students ($N = 42$) and the instructional strategies used by the teachers. First, the students' quality of experience in math class was measured using an adapted Experience Sampling Form (ESF). Second, the quality of student experiences was compared to the teachers' class instructions as observed by the researcher. Results showed the balance between class challenges and student skills determined the levels of student participation. Students reported high levels of cognitive involvement when the classroom activities matched their skills. However, when assigned challenges that exceeded student skill levels, students experienced low engagement. Moreover, teachers who applied instructional scaffolding allowed students to experience high levels of involvement within the learning environment. Instructional scaffolding was defined as a student-centered approach where students were collaborators in the teaching and learning process (Turner et al., 1998). Students were more engaged when teachers adapted class activities and challenges while responding to the capabilities of the students.

Rathunde and Csikszentmihalyi (2005) further investigated student-centered learning environments and flow experiences by observing a sample of students (N = 150) enrolled at five Montessori schools and six traditional middle schools. The educational beliefs of the selected Montessori schools allowed for flexibility in the curriculum. Teachers at the Montessori schools assigned activities based on the students' developmental needs such as working in smaller groups and engaging in self-directed work. Students from both types of middle schools participated in the Experience Sampling Method (ESM). Results of a multivariate analysis of covariance (MANCOVA) indicated that students from the Montessori schools experienced greater (a) flow experience, (b) intrinsic motivation, and (c) potency (e.g., feeling energetic) when compared to students from the traditional middle schools. Results further indicated that school contexts (e.g., policies and practices of the school) had a significant impact on student motivation and classroom experiences.

Peterson and Miller (2004) compared the quality of student learning experiences between two different classroom contexts. A sample of 90 undergraduate education majors (20 males and 70 females) ranging in age from 18 to 32 completed two adapted Experience Sampling Forms (ESF) over the course of a semester. Participants completed the first ESF during a cooperative learning activity, in which students accomplished learning tasks in a small group setting. They completed the second ESF during large-group instruction where instructors taught to the entire class. Participants in the cooperative learning setting reported (a) a better quality of experience, (b) higher levels of engagement, (c) increased motivation, and (d) increased cognitive

involvement. These findings suggest that teachers who embraced elements conducive to flow could positively influence students' learning conditions.

Studies using the Experience Sampling Method (ESM) have shown that various instructional strategies and classroom activities determined by the teacher could affect students' learning experience (Csikszentmihalyi & Larson, 1984; Csikszentmihalyi, Rathunde, & Whalen, 1993; Peterson & Miller, 2004; Rathunde & Csikszentmihalyi, 2005; Shernoff et al., 2003; Turner et al., 1998). In addition to assigning challenges that met perceived student skills, teachers who (a) provided feedback relevant to student goals (Shernoff et al., 2003), (b) engaged students in group work (Csikszentmihalyi & Larson, 1984; Peterson & Miller, 2004; Shernoff et al., 2003), (c) shared genuine enthusiasm toward a subject and paced activities based on student needs (Csikszentmihalyi, Rathunde, & Whalen, 1993), and (d) created a student-centered learning environment (Rathunde & Csikszentmihalyi, 2005; Shernoff et al., 2003; Turner et al., 1998) could indeed capture the attention of their students.

Teacher flow experiences in the classroom. While many researchers have examined the quality of student experiences in the classroom, several researchers have studied the flow experiences of teachers in various academic settings (Basom & Frase, 2004; Caouette, 1995; Cartwright, 2006; Chang 1996; Frase, 1998; Gunderson, 2003; Hill, 2004; Salanova, Bakker, & Llorens, 2006). Caouette (1995) investigated the phenomenon of flow experience among a sample of middle school and high school classroom teachers ($N = 6$) representing two school districts. Based on the participant recommendation guidelines, school administrators provided the researcher with a list of teachers who met the specific criteria for this study (i.e., teachers who enjoy the

teaching process and seek challenges while teaching). Each teacher met with the researcher over a period of two to three weeks to participate in three in-depth, semi-structured interviews. Through inductive analyses, Caouette (1995) identified five conditions necessary for teacher flow experiences to occur: (a) teachers' perception of students in flow, (b) seeing growth in students, (c) achieving goals and feeling successful as teachers, (d) positive learning environment, and (e) being challenged. These experiences were enhanced by a teachers' (a) preparedness, (b) control over classroom issues, (c) collegial support, (d) ability to learn while teaching, and (e) sufficient planning time. In addition, teachers believed their own flow experiences while teaching caused students to be more engaged.

Cartwright (2006) explored leadership orientations and flow experiences among a sample of teachers (N = 132) in the state of Washington. Participants were recognized as creative and effective teachers. All participants completed the following measures: (a) The Dispositional Flow State (DFS-2) scale developed by Jackson and Eklund (2004), (b) Bolman and Deal's (1990) Leadership Behavior Orientation Scale, and (c) a researcher-designed demographic survey. Results indicated that 28% of the sample taught high school, 52% taught for over twenty years, 85% earned a Master's degree, 80% participated in leadership roles (i.e., department chair, mentor), and 40% reported to have engaged in positive collegial discussions regarding student learning on a daily basis. A majority of the teachers taught an average class size of 26 to 30 students in a medium size school (i.e., approximately 500 to 1,000 students).

Teacher flow experiences were measured by completing the DFS-2 scale while reflecting on their best teaching moments (Cartwright, 2006). Findings suggested that

all teachers experienced the nine dimensions of flow during their best teaching experiences. Furthermore, a majority of participants reported that students were the most encouraging variable to promote teacher flow, followed by support from principals, colleagues, and parents. Results illustrated the following reasons educators remained in the teaching profession: (a) 40% reported positive relationships with students, (b) 22% experienced flow while teaching, (c) 15% loved what they were teaching, (d) 10% had control over their work environment, (e) 7% engaged in positive collegial relationships, (f) 4% were fond of the financial awards, and (g) 2% enjoyed the flexible work schedules. Student interaction was identified as the most significant factor that assisted teachers to achieve flow experiences.

While Cartwright (2006) only studied creative teachers, Gunderson (2003) examined the flow experiences of both highly effective and average high school instructors ($N = 20$). Half of the participants ($n = 10$) were identified as effective teachers and the other half ($n = 10$) were randomly selected from the same high school. Teachers provided videotapes of their teaching and participated in one-on-one interviews. When coding for the presence of flow, the researcher watched 10 randomly selected, one-minute segments of each teaching video. While watching the selected clips, the researcher coded the intensity of the teachers' eye contact with students in the class to determine teacher flow during the lesson. The intensity of teacher eye contact provided a means to measure the amount of attention each teacher paid to his or her students.

Participant interviews were used to cross-validate the coding derived from the teaching videos (Gunderson, 2003). Results indicated that teachers who were evaluated

as effective teachers also cultivated flow experiences while teaching. Effective teachers focused on the students and understood the course content must be relevant to students in order to facilitate student engagement. These teachers were able to foster a learning environment that motivated and challenged students while also developing their own interests toward the discipline. Results also demonstrated that teacher eye contact provided persuasive non-verbal feedback when determining one's level of flow experience.

Hill (2004) used the Experience Sampling Method (ESM) to examine the relationships between variables in the work environment and experiences of flow among full-time community college faculty (N = 33). Participants wore programmed watches for five days and were randomly signaled four times a day to complete a three-part questionnaire, which included 29 items. Section 1 included two questions referring to the participant's (a) level of engagement and (b) identification of the work activity. Section 2 included 18 items, which were selected from the Flow State Scale (Jackson & Marsh, 1996). Section 3 included nine questions relating to the level of challenges and skills experienced by the participant. Results showed that community college faculty experienced flow during work and enjoyed class time with students.

Chang (1996) explored factors that affected the flow experience of student teachers. Participants were enrolled in a Master's program and were aiming to receive K-8 teaching certification. Student teachers (N = 20) completed two forms that measured their skill level in relation to the level of professional challenges presented to them. Next, five of the student teachers participated in an open-ended, semi-structured interview. All participants were then rated on the following tasks: (a) routine duties, (b)

managing students, (c) working with faculty, (d) working with the principal, (e) developing curriculum, (f) organizing materials, (g) assessing students, and (h) identifying students with special needs.

Results revealed that classroom management was the task most associated with flow achievement. It was further revealed that (a) feedback from the faculty advisor, (b) feedback from the students (i.e., through verbal or non-verbal feedback, or accomplished activity), and (c) self-evaluation were the most significant factors in the facilitation of teacher flow experiences. Furthermore, teachers who combined flexibility and positive thinking in their teaching were able to restructure their cognitive state in order to achieve flow.

Frase (1998) investigated teachers' flow experiences in several large urban school districts. A sample of teachers ($N = 201$) representing various grade levels, ethnicities, ages, and years of teaching experience completed (a) a Flow Study Survey, (b) a Teacher Self and Organizational Efficacy Assessment (TSOEA), and (c) an Index of Perceived Organization Effectiveness (IPOE). The researcher then interviewed 16 selected teachers, who were known for their teaching excellence by colleagues and principals. The interviews focused on the (a) variables that hindered and assisted flow experiences and (b) feelings associated with flow while teaching.

Results indicated that random interruptions such as intercom announcements or bells distracted flow incidents. In addition, detailed lesson planning and proper classroom preparation were prerequisites for achieving flow experiences. Teacher self-efficacy also predicted the frequency of flow experiences. It was further discovered that teachers who experienced flow in class felt connected to the students as they witnessed

students becoming more interested and enthusiastic in the subject matter. Participants enjoyed knowing they were the facilitators of their students' engagement.

Additional research (Basom & Frase, 2004; Frase, 1998; Frase, 2001) summarized personal and job-related factors that motivated teachers in their classroom environment. The following factors were presented as vital variables conducive to teacher flow experiences: (a) frequency of principal visits to the classroom, (b) teacher-perceived efficacy of professional development, (c) teacher-perceived efficacy of performance evaluation, (d) teacher self-efficacy, and (e) perceived efficacy of other teachers. There was a significant difference in teacher flow as well as student flow when principals visited to classrooms. Most importantly, teacher self-efficacy and student achievement were greatest predictive variables of flow experiences among students and teachers.

Salanova, Bakker, and Llorens (2006) investigated personal resources (i.e., efficacy) and organizational resources (i.e., social support, autonomy, administrative objectives and feedback) among a sample of secondary school Spanish teachers (N = 258). Participants (57% women and 43% men) from 24 schools completed the following measures: (a) FOCUS Organization Culture Questionnaire (Gonzales-Roma et al., 1995), (b) Self-Efficacy Scale (Schwarzer, 1999), and (c) Work-Related Flow scale (Bakker, 2001). Based on the results of a SEM analysis, it was discovered the following variables had a direct effect on teacher flow experiences: (a) self-efficacy, (b) social support from co-workers and administrators, (c) well-defined work objectives, and (d) opportunities to provide feedback.

Flow Experiences in the Music Classroom

Csikszentmihalyi (1990) shared his insight on music and flow:

> In every known culture, the ordering of sound in ways that please the ears has been used extensively to improve the quality of life (p. 108)…. even greater rewards are open to those who learn to make music (p. 111)…. [But] even when children *are* taught music, the unusual problem often arises: either too much emphasis is placed on how they perform, and too little on what they experience (p. 112).

Elliot (1995) believed this issue stems from performance-based music programs, in which teachers are more concerned about the final product than sharing the authentic process of musical performance. Also, teachers' level of musicianship (i.e., musical skill) and *educatorship* play a significant role in the students' learning experience. Educatorship refers to a teacher's knowledge and ability to "think-in-action in relation to students' need, subject matter criteria, community needs, and the professional standards that apply to each of these" (p. 252).

In order to enhance student flow experiences in the music classroom, Elliot adapted Csikszentmihalyi's Flow theory model (see Figure 2.1) to discuss the core values of music making. He believed that musical enjoyment is experienced when a person's level of musicianship matches the musical challenge. Elliot explains:

> The task of music education is not to develop the various forms of musical knowledge as ends in themselves but to develop the musicianship of learners through progressive musical problem solving in balanced relation to appropriate musical challenges every step of the way… Self-growth, self-knowledge, and musical enjoyment are the aims of music education overall and the primary goals of every music teaching-learning episode (p. 122).

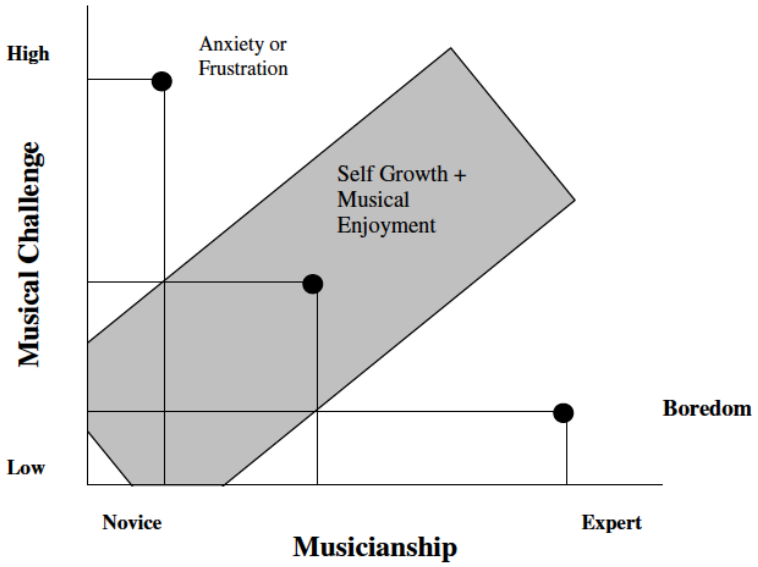


Figure 2.1. The Music Flow Model from *Music Matters* by D. J. Elliot, 1995, p. 122. As adapted from Csikszentmihalyi (1975).

When music students achieve a certain level of musicianship and musical challenge through musical practice, they can experience flow while engaged in the process of music learning. Other researchers have also found relevance in applying flow theory and using the Experience Sampling Method (ESM) to examine student motivation and quality of experience in the music classroom (Cassie, 2011; Custodero, 1997; Freer, 2008; Jaros, 2008; Kraus, 2003; Montanez, 2011; Parente, 2011; Rybak, 1995/1996).

Student flow experiences in the music classroom. Custodero (1997) investigated the music learning processes of young participants (N = 11) between the ages of four and five in a beginning music class. Data collection involved eight 60-minute videotapes of the participants as well as parent questionnaires and taped interviews with the participants. To code the videotaped experiences of young children in music settings, the researcher developed the Flow Indicators in Musical Activities

(FIMA) form, which was based on Csikszentmihalyi's Experience Sampling Form (ESF). The FIMA allowed the researcher to systematically observe the physical actions of each child for indicators of flow and learning experiences. The FIMA measured (a) descriptive variables (i.e., participant name, date, length, familiarity, and specific activities), (b) affective variables (i.e., happy, cheerful, involved, alert, active, excited, satisfied, successful, comfortable), and (c) behavior variables (i.e., challenge, adult awareness, peer awareness, anticipation, expansion, extension, imitation, skill). One open-ended question asked the children if they were experiencing flow.

Custodero also looked at the associations among flow and (a) the length of activities, (b) social context (i.e., one-on one or group interaction with parent, teacher or other children), (c) situational context (i.e., floor activities or at the keyboard), and (d) specific musical activities (i.e., singing, ear training, rhythm activities, and drill games). Results generated from the Flow Indicators in Musical Activities (FIMA) form suggested that children were most likely to achieve flow when the teacher provided clear goals, gave immediate feedback, and demonstrated the value of the activity. When the teacher interfered with the child's sense of control in the learning process, the child's experience was less positive. Results further indicated that (a) pacing of activities, (b) instructional format, and (c) specific musical activities were important variables that determined the flow of young children in music class.

In a similar study, Cassie (2011) adapted Custodero's FIMA to examine flow experiences among a sample of 6th-grade middle school students ($N = 11$) participating in a beginning string orchestra. The results of observable student flow experiences were also compared to music activities led by the instructor. Findings suggested repetition of

warm-ups (i.e., scales played in unison) prepared the students aurally and kinesthetically for performance activities conducted throughout the lesson. The author observed that the majority of flow experiences occurred among students during (a) longer activities (between five to 20 minutes), (b) the last three classes of eight classes observed, (c) group performance activities, (d) warm-up scales played in unison, (e) playing along with instructor at the piano, and (f) moments when students were situated in non-traditional seating formations. It was determined that (a) pacing of activities, (b) physical structure of the class, and (c) certain types of musical activities affected the level of flow experiences among students.

Rybak (1995/1996) observed the flow experiences of older adults (N = 21) who participated in recreational musical activities. There were four musical groups: (a) banjo players, (b) recorder players, (c) hand bell ringers, and (d) instrumentalists and vocalists. After videotaping class sessions, each participant met with the researcher for an extensive interview. During the interview, participants completed the Flow Questionnaire and the Adult Leisure Music Experience Scale (ALMES) while watching videotaped segments of previous lessons. The ALMES form was used to examine the following environmental variables that might affect flow experiences in the music class: (a) role of leadership, (b) other people in class, and (c) music selection. Based on the ALMES results, it was determined the environment and leadership variables were rated as the most important factors that impacted enjoyment in the classroom. Through inductive analysis, it was discovered that high standards from the instructor and minimal class distractions promoted flow experiences in class. Also, low levels of preparation and mental distractions disrupted students' flow in class.

Kraus (2003) found that flow experiences among a sample of college students (N = 7) participating in a wind ensemble rehearsal were dependent on the behavior and abilities of others in class. While less prepared students distracted the flow experiences of others, students who exerted autotelic traits (i.e., inwardly focused and adaptive to environment) helped to facilitate the flow of rehearsal. Prior to their interviews with the researcher, participants completed the Experience Sampling Form (ESF) several times during wind ensemble rehearsals. Results showed that students did not experience flow conditions during the early or middle segments of rehearsals. Rather, they were more likely to experience flow in the later segments of rehearsals. In addition, experienced students were able to identify personal goals and challenges during rehearsal while less experienced students depended more on direct instructions. It was determined that the (a) demeanor of other students and (b) teacher's ability to provide a variety of instructional approaches to fit diverse student learning styles could impact students' flow experience during wind ensemble rehearsals.

Jaros (2008) examined optimal experiences among high school choir students (N = 43). Participants completed the Singing Experience Questionnaire, which measured gender, years of experience, and grade level. In order to measure student flow, participants completed the (a) researcher-developed Choral Singing Experience Sampling Form (CSESF), which was based on the Experience Sampling Form (ESF) (Csikszentmihalyi & Larson, 1984); (b) Dispositional Flow State Scale (DFS-2); and (c) Flow State Scale-2 (Jackson & Eklund, 2004). During the three-hour rehearsal period, each student completed four CSESFs.

Results of an analysis of variance (ANOVA) indicated that singers with more years of choral experience had a greater sense of control during rehearsals. Furthermore, there were no significant differernces by gender on flow conditions. All participants experienced flow at least once during rehearsals, and the most significant predictor was autotelic experience ($M = 3.77$), followed by clear goals ($M = 3.29$), challenges and skills ($M = 3.15$), and feedback ($M = 3.07$). Similar to the results derived from the Kraus (2003) study, flow conditions were more likely to occur during the later segments of the rehearsal. In addition, repertoire selection was identified as a type of assigned musical challenge that produced flow experiences when balanced with students' skill levels.

Montanez (2011) used the Flow State Scale-2 form (Jackson & Eklund, 2004) to examine flow experiences among high school instrumental students ($N = 481$). Findings indicated that years of playing experience and hours spent practicing per week were significant predictors of student flow. After analyzing the flow conditions, a subsample of students ($n = 24$) who exhibited high flow status were asked to participate in a semi-structured interview. Through inductive analysis, three emergent flow facilitators were revealed: (a) optimal physical preparation (e.g., relaxation, warming-up before performance), (b) optimal mental preparation (e.g., applied performance rituals, focused concentration) and (c) optimal environment (e.g., appropriate noise level, weather). The three flow inhibitors were (a) non-optimal physical preparation (e.g., making mistakes, lack of warm-up), (b) mental distracters (e.g., negative talk from instructor, pep talks), and (c) non-optimal environments (e.g., weather, instrument malfunction).

Modeled after a study by Turner et al. (1998), Freer (2008) investigated the relationships between teacher instructional strategy (i.e., scaffolding vs. non-scaffolding language) and rehearsal experiences of middle school choral students. Data were collected from students ($N = 88$) representing two middle schools. Participants completed a number of Student Response Logs (Turner et al., 1998) over the course of 20 rehearsals. The researcher observed rehearsals to examine (a) non-verbal instructional procedures, (b) instruction scaffolding, (c) sequential units of instruction, (d) student behaviors, and (e) classroom contexts. Individual interviews were then conducted with the teachers and their district supervisors. Results indicated that teachers who used a higher percentage of scaffolding language were better able to assist individual learning needs while maintaining an effective group-learning environment. When scaffolding was used during rehearsals, students were given the opportunity to make decisions rather than follow teacher commands. Results indicated a positive correlation between the teachers' presentation of instructional feedback and the students' quality of experience in the music classroom.

Parente (2011) explored flow theory, along with the Phases of Learning developed by Fitts and Posner (1967), as an instructional approach for beginning keyboard students. The researcher observed eight secondary undergraduate music majors who volunteered to participate in a six-week summer session before their first semester at the college. During the first three weeks, all students learned *German Dance* by Beethoven, under the guidance of the teacher-researcher using the Phases of Learning/Flow paradigm. The three Phases of Learning stages (i.e., cognitive, associative, and autonomous) were explained to the participants. Students were asked

to practice one segment until they reached the autonomous stage before moving on to the next practice section. In the meantime, students completed the four Skills/Challenge Phase of Learning (SCPL) form every 15 minutes during the one-hour class session. The teacher-researcher also completed the SCPL forms based on his perception of the students' experiences. Outside of class, students completed the SCPL form after every practice session. During the final three weeks, students (a) chose their own piece of music from a repertoire list provided by the teacher-researcher and (b) selected their own segments to practice. Participants completed the SCPL form four times per class and at the end of each practice session outside of class. They were encouraged to use the Phases of Learning/Flow paradigm on their own when practicing their second musical selection.

Results indicated that the Phases of Learning/Flow paradigm facilitated the achievement of the flow among group piano students and increased student motivation during practice outside of class. Students who did not attempt to follow the three Phases of Learning stages, or select segments that were attainable in relation to their skill level, did not enjoy practicing as much as those who pursued the Phases of Learning/Flow paradigm. During the second half of the study, students who (a) selected practice segments that provided appropriate challenges and (b) self-monitored their progress were able to work efficiently and enjoy the learning process.

The researcher discovered that several students had difficulty gauging their skill level. Other students experienced more enjoyment and conditions of flow under the guidelines of the teacher, and could not commit to the Phrases of Learning/Flow paradigm on their own. Findings suggested that piano teachers could foster student

flow during class and outside of class by (a) providing clear goals, (b) assigning appropriate challenges that match students' skill level, and (c) helping students assess their progress.

Teacher flow experiences in the music classroom. Two studies have considered the teachers' experiences of flow when working with music students in a group setting (Custodero & Stamou, 2009; Jondrow, 2001). Jondrow (2001) conducted a case study on an undergraduate music education student teacher. The researcher identified the participant as a natural student teacher who was able to handle the role of a teacher early in the practicum. The participant had minimal classroom issues and fostered a positive rapport with the students while creating a productive music classroom environment. The participant was in her last semester of student teaching as a choir conductor at a high school where she worked closely with a cooperating teacher. The student teacher was also under the supervision of a university advisor. Jondrow explored the characteristics and beliefs of this exceptional student teacher, and the conditions that allowed for flow experiences while teaching. The researcher collected field notes four times over the course of five weeks, and then interviewed the student teacher, the cooperating teacher, and select choir students separately.

Data revealed that the student teacher (a) focused on the students, (b) concentrated on the objectives of the rehearsal, (c) provided clear instructions, (d) treated all students equally, and (e) understood the needs of high school choir students. The characteristics of the student teacher were described as energetic, focused, fearless, adaptable, and exemplified the autotelic personality. The student teacher created learning environments that promoted musical flow experiences for the students and

herself as the teacher. She received meaningful support from the cooperating teacher while integrating (a) clear musical goals, (b) logical class objectives, (c) flexible expectations, and (d) self-reflections into her teaching. The student teacher was able to experience flow while teaching. As a result, the students responded to her as a person and to her passion and dedication to music.

According to Custodero (2011), if teachers are able to observe indicators of flow in their students, they too could achieve flow by discovering how to promote flow experiences in music learning. Although Custodero (1997) mainly focused on the experiences of flow in musical activities among young children, the researcher later explored the use of the Flow Indicator of Musical Activity (FIMA) form as a pedagogical tool for teachers to determine student enjoyment (Custodero & Stamou, 2006).

Custodero and Stamou (2006) extended the use of the Flow Indicator of Musical Activities (FIMA) form as a device for teachers to observe and measure student engagement. In an exploratory study, 28 music instructors (elementary music teachers and studio teachers who taught piano, violin, and guitar) engaged in an action inquiry project to explore the value of using the flow experience as a paradigm in music educational settings. Participants attended three extensive seminars, which entailed preparation, planning, and implementation of the action project set up by the individual teachers. Seminars also included discussions on observable flow indicators and personal teaching philosophies. Participants also completed questionnaires, self-reflections, and viewed videotaped teaching excerpts of other participants.

Teachers selected specific students in their class for observation, and used the FIMA form to closely assess the behaviors of the selected students during each lesson. The purpose of the FIMA forms was to create pedagogical change based on the outcome of their observations. By the end of the project, many participants transformed their *teacher image* from being the center of attention in the classroom to outside the margin where students became center of attention. By observing their students' behaviors and expressions, teachers were able to change their own behavior in order to create a more optimal learning environment. Teachers enjoyed the process of "influencing and being influenced by students" (Custodero & Stamou, 2009, p. 23). Music instructors achieved flow when they (a) engaged in quality interactions with the students; (b) applied self-reflection; and (c) created logical, yet adaptable lesson plans.

Student and Teacher Flow Experiences in the Classroom

Three studies examined the relationships between teacher and student flow experiences in the classroom (Bakker, 2005; Di Bianca, 2000; Zhu, 2001). Di Bianca (2000) investigated the influences of specific aspects of class instruction on student engagement. This study included the following independent variables: (a) teacher engagement, (b) instruction format, and (c) academic tasks. The dependent variable was student engagement. A sample of high school students (N = 375) along with a sample of math and science teachers (N = 14) from two urban high schools participated in the study. The researcher modified the original Experience Sampling Forms (ESF) (Csikszentmihalyi & Larson, 1984). Both students and teachers completed the modified ESF when signaled. The alarm went off one to two times during each 50-minute class

period for a total of four weeks (split between two-week phases). Teachers and students also completed a background survey.

Results showed that student engagement increased when (a) tasks were challenging, (b) students were given options, (c) materials covered were relevant to situations outside of school, (d) students were able to interact with others, and (e) tasks were enjoyable. However, students were not necessarily engaged when instructors reported high levels of engagement while teaching. This was due in part to the teacher-centered instructional approach exhibited by many teachers. Teachers were more likely to experience flow when they were in control and active in class (e.g., lecture, film), while students were more likely to experience flow when the class was student-paced (e.g., lab activity, computer work). It was discovered that teacher engagement levels correlated highly with student engagement levels in the high track classes. High-track students exhibited higher levels of intrinsic motivation, which proved to be a significant predictor of teacher engagement. In addition, statistically significant predictors of student flow included (a) instructional format (e.g., type of activity, pace of activity), (b) relevance of course material, and (c) matching instructional challenges with student skills.

Zhu (2001) also examined the relationship between teachers' flow experience and students' cognitive engagement. Using the Experience Sampling Method (ESM), the researcher collected data at various elementary and secondary schools in British Columbia over the course of five consecutive school days. Participating students and randomly selected teachers completed a total of 5,047 Experience Sampling Forms (ESF). There were two versions of the questionnaire: (a) the ESF for Teachers' Flow

Experience in the Classroom and (b) the ESF for Student Cognitive Engagement in the Classroom. The dependent variable was student cognitive engagement, and the independent variables were (a) teacher flow (flow vs. non-flow), (b) time of day (a.m. vs. p.m.), (c) gender (female vs. male), (d) grade (6th to 10th-grade), (e) subject (i.e., English, math, science, social science, French, woodwork, arts, and computers), and (f) instructional method (i.e., lecture, group work, individual work, and one-on-one instruction).

Results of a multiple regression analysis indicated that teacher flow was the only statistically significant predictor of student cognitive engagement ($B = 24.95$, $t = 10.60$, $p < .001$). When teachers experienced flow in the classroom, students were 25% more likely to be cognitively engaged in the learning process. In addition, male students exhibited lower levels of cognitive engagement than female students, and students in social studies and woodwork classes showed the least amount of engagement (Zhu, 2001).

Bakker (2005) explored the flow experiences of music teachers ($N = 178$) and students ($N = 605$) representing 75 music schools. Each participant completed a comprehensive questionnaire. The teacher questionnaire was designed to measure the following variables: (a) ability to balance challenges and skills, (b) job resources (i.e., autonomy, social support, coaching by the supervisor, and performance feedback), (c) absorption, (d) work enjoyment, and (e) intrinsic work motivation. To measure student absorption, enjoyment, and intrinsic motivation, teachers selected one to four music students during one class session to complete a short flow questionnaire based on the Work-Related Flow scale (Bakker, 2001).

Results of a structural equation model (SEM) indicated job resources had a direct effect on teachers' flow experiences. Relevant job resources allowed teachers to attain a balance between work related challenges and skills. In addition, teacher flow had a direct effect on (a) students' level of enjoyment and absorption in music and (b) the social support from colleagues and supervisors. The more often teachers experienced flow while teaching, the more often students experienced flow when playing music. Teachers who exhibited high levels of intrinsic motivation also promoted more flow experiences among students. These findings suggest that flow experiences may crossover from teachers to students. Furthermore, teachers who were provided adequate job resources were more likely to experience flow in the classroom, which ultimately influenced students' flow experiences.

Summary of Related Research

This chapter highlighted the previous literature related to flow theory, experiences of flow in the academic classroom and music classroom, and the relationship of flow among students and teachers. The previous research revealed important factors that impact achievement of flow in music learning, including (a) perceived repertoire selections, (b) relevant feedback, (c) clear objectives, (d) adaptable lesson plans, (e) balance between class challenges and personal skills, (f) teacher and student behavior, (g) instructional formats, and (h) pacing of classroom activities.

Teachers' flow experiences occurred as a result of their (a) relationship with students (Basom & Frase, 2004; Caouette, 1995; Cartwright, 2006) and (b) perceptions

of student feedback (Chang, 1996; Frase, 1998; Gunderson, 2003; Salanova, Bakker, & Llorens, 2006).

Furthermore, teachers experienced flow when they (a) saw growth in their students (Caouette, 1995), (b) perceived students in flow (Gunderson, 2003), (c) focused on engaging students (Chang, 1996), (d) achieved goals (Caoette, 1995), and (e) were challenged (Caouette, 1995). Administrators also played an important role in establishing an optimal teaching environment by providing relevant resources and supporting teacher objectives (Basom & Frase, 2004; Frase, 1998; Salanova, Bakker, & Llorens, 2006).

Research in music education has studied flow experiences among students of all ages (i.e., young children, middle school students, high school students, college students, and senior citizens) and various musical contexts (i.e., group music lesson, string orchestra, wind ensemble, choir, and instrumental ensemble rehearsals). Several studies modified the Experience Sampling Form (ESF) to better fit the music teaching and learning context. These measures included the (a) Flow Indicator of Musical Activities (Custodero, 1997), (b) Adult Leisure Music Experience Scale (Rybak, 1995/1996), (c) Choral Singing Experience Sampling Form (Jaros, 2008), and (d) Skills/Challenge Phase of Learning (Parente, 2011).

Based on the results gathered in music classrooms, students' flow experiences involved consistent exertion toward developing skills necessary to meet the challenges of a given situation (Custodero, 1997; Jaros, 2008; Kraus, 2003; Montanez, 2011; Parente, 2011). Clear goals, instructor feedback, and high standards (Rybak, 1995/1996) were also important factors that assisted conditions of student flow. Skill-

related variables such as years of experience (Jaros, 2008) and hours of practice (Montanez, 2011; Parente, 2011) were found to share positive correlations with student flow experiences in the music classroom.

Other variables that influenced the flow experiences among music students included (a) length of activity (Cassie, 2011; Custodero, 1997; Jaros, 2008), (b) instructional strategies that provided students the sense of control (Custodero, 1997; Freer, 2008; Parente, 2011), (c) repertoire selection (Jaros, 2008; Rybak, 1995/1996), (d) class environment (Montanez, 2011), (e) other students in class (Kraus, 2003; Rybak, 1995/1996), and (f) types of musical activities (Cassie, 2011; Custodero, 2011). Over the past decade, researchers have found relevance in using the Experience Sampling Method (ESM) and flow theory to examine the quality of musical experiences among students in relation to classroom contexts established by the music instructor. This study aims to contribute to the previous literature by exploring the flow experiences of group piano teachers and their students, as well as the relevance of instructional format and perceived behaviors on the flow experiences among teachers and students in the collegiate group piano classroom.

Chapter III

Method

The purpose of this study was to explore the flow experiences of group piano teachers and their students, as well as determine the relevance of specific classroom conditions on the flow experiences in the collegiate group piano classroom. It is hoped the results of this study will allow music educators to (a) better characterize the conditions conducive to flow achievement in the collegiate group piano classroom and (b) increase the quality of the teaching and learning experience for both students and teachers. The following research questions will be addressed:

1. Are there significant differences in flow scores across instructional formats?
2. Is there a relationship between flow scores and (a) pacing of activity, (b) perceived level of observation, and (c) perceived level of engagement?
3. Is there a relationship between teacher flow scores and student flow scores?
4. Do teacher and student flow scores rise and fall in a regular manner through the course of a lesson?
5. Do any of the following variables predict student flow scores: (a) school level, (b) music major, (c) prior musical experience, and (d) frequency of practice?
6. Do any of the following variables predict teacher flow scores: (a) degree level, (b) class size, and (c) lesson planning?

Participants

A sample of group piano teachers ($N = 3$) from three different community colleges in Southern California who taught the Beginning Piano I course agreed to participate in the research during the Summer 2015 semester. Piano students enrolled in their teachers' classrooms ($N = 32$) volunteered to participate in the research with the instructor. Student participation varied by classroom (see Table 1).

Table 1

Number of Teacher and Student Participants

	Teacher	Student	Class Size
School A	1	14	19
School B	1	10	21
School C	1	8	11
Total	3	32	51

Instrumentation

This study focused on five aspects of group piano experience: (a) student flow, (b) teacher flow, (c) instructional format, (d) perceived behavior of the students, and (e) perceived behavior of the teachers. Students and teachers completed similar Experience Sampling Forms (ESF). Each participant received 12 ESFs. In addition, students and teachers completed a background questionnaire.

Group piano teacher and piano student questionnaires. Participating students completed the Piano Student Questionnaire (see Appendix 1), which was designed to collect the following information: (a) education status, (b) music

background, (c) reason for enrollment, and (d) frequency of piano practice. The Group Piano Teacher Questionnaire (see Appendix 2) was designed to collect the following information: (a) education background, (b) piano teaching experience, (c) current class size, and (d) frequency of lesson planning.

Piano student experience sampling form (*PSESF*). The Piano Student Experience Sampling Form (*PSESF*) was adapted from the Experience Sampling Form (Csikszentmihalyi & Larson, 1984), and the Flow State Scale (Jackson & Marsh, 1996). The Piano Student Experience Sampling Form was comprised of 13 items (see Appendix 3).

- **Item one** identified the instructional format experienced by the student participants. Students responded to item one (i.e., "What was the main instructional activity?") by selecting one of the following instructional formats: (a) teacher-led group instruction, (b) one-on-one instruction with teacher, (c) self practice session, (d) practice session in groups of two or more, (e) group performance, and (f) individual student performance.
- **Item two** related to the perceived pacing of the activity (i.e., "The pacing of the instructional activity was just right."). Students responded to this item using the following 5-point Likert-type scale: (1) *Strongly Disagree,* (2) *Disagree*, (3) *Neither Agree or Disagree*, (4) *Agree,* and (5) *Strongly Agree.*
- **Items three and four** were designed to measure students' perceptions of their teacher's behaviors. Student participants responded to these items using a 5-point Likert-type scale: (1) *Strongly Disagree,* (2) *Disagree*, (3) *Neither Agree or Disagree*, (4) *Agree,* and (5) *Strongly Agree.* Item three addressed the

perceived level of observation received by the teacher: "The teacher was observing us carefully." and item four referred to students' perception of teacher flow: "The teacher seemed to be enjoying what he/she was doing." Student participants responded to these items using a 5-point Likert-type scale: (1) *Strongly Disagree,* (2) *Disagree*, (3) *Neither Agree or Disagree*, (4) *Agree,* and (5) *Strongly Agree.*

- **Items five through 13** were designed to measure the following nine dimensions of flow: (a) balance of challenge and skill, (b) clarity of goal, (c) clarity of feedback, (d) concentration, (e) sense of control, (f) loss of self-consciousness, (g) transformation of time, (h) merging of awareness and action, and (i) autotelic experience. Participants responded to each of the nine statements using a 5-point Likert-type scale: (1) *Strongly Disagree,* (2) *Disagree*, (3) *Neither Agree or Disagree*, (4) *Agree,* and (5) *Strongly Agree.* These nine items were selected from the Flow State Scale (Jackson & Marsh, 1996) (see Appendix 4).

Group piano teacher experience sampling form (*GPTESF*). The Group Piano Teacher Experience Sampling Form (*GPTESF*) was also adapted from the Experience Sampling Form (Csikszentmihalyi & Larson, 1984), and the Flow State Scale (Jackson & Marsh, 1996). It was comprised of 13 items (see Appendix 5), similar to the Piano Student Experience Sampling Form (*PSESF*).

- **Item one** identified the instructional format and pacing of the activity experienced. Teacher participants responded to item one (i.e., "What was the main instructional format of the class?") by selecting one of the instructional formats listed (i.e., teacher-led group instruction, one-on-one instruction with

teacher, self practice session, practice session in groups of two or more, group performance, and individual student performance).

- **Item two** related to the perceived pacing of the activity (i.e., "The pacing of the instructional format was just right."). Teachers responded to this item using the following 5-point Likert-type scale: (1) *Strongly Disagree,* (2) *Disagree*, (3) *Neither Agree or Disagree*, (4) *Agree,* and (5) *Strongly Agree.*
- **Items three and four** were designed to measure the teacher's perception of student behaviors. Teachers responded to item three, "The students were observing my instructions carefully." and item four, "Students seem to be engaged and learning." using a 5-point Likert-type scale: (1) *Strongly Disagree,* (2) *Disagree*, (3) *Neither Agree or Disagree*, (4) *Agree,* and (5) *Strongly Agree.*
- **Items five through 13** were designed to measure the nine dimensions of flow. These nine items were the same as those used in the Piano Student Experience Sampling Form (*PSESF*).

Procedures

Prior to recruitment and data collection, approval was sought from the University of Oklahoma Institutional Review Board (IRB) (see Appendix 6). An email was then sent to the chair of Institutional Review Boards of six community colleges in Southern California to request approval to conduct the study on campus and to recruit Beginning Piano I instructors. Three of the community colleges agreed to participate in the study.

Recruitment. Once IRB and outside institutional administrative approvals were completed, a recruitment email was sent to community college group piano instructors in Southern California who taught the Beginning Piano I summer sessions during the Summer 2015 semester (see Appendix 7). The three group piano professors who agreed to participate in the study received a digital copy of the following documents for review: (a) teacher informed consent form (see Appendix 8), (b) student recruitment letter (see Appendix 7), (c) student informed consent form (see Appendix 8), and (d) script of the orientation session (see Appendix 9).

Experience Sampling Method orientation session. Prior to data collection, the researcher conducted an Experience Sampling Method (ESM) orientation at each school. The researcher met with the group piano instructor before the orientation class session to collect the teacher participant informed consent form and to explain the methodology of the study. During this session, all students received an orientation packet, which included (a) a student recruitment letter, (b) three Piano Student Experience Sampling Forms (*PSESF*), (c) an informed consent form, and (d) a Piano Student Questionnaire marked with a student participant ID number. The teacher also received an orientation packet that included (a) three Group Piano Teacher Experience Sampling Forms (*GPTESF*) and (b) a Group Piano Teacher Questionnaire marked with a teacher participant ID number. Teachers also received an iPod programmed with three pre-set alarm signals.

At the beginning of the orientation session, the researcher discussed the purpose of the study, the method of the study, and the informed consent process. Students were informed of the following information: (a) they must be over the age of 18 to

participate, (b) their participation was voluntary, and (c) they had the option to withdraw from the study at any time. Student participants who agreed to participate in the study signed the student informed consent form. Students who did not agree to participate returned the packet. The purpose of the orientation session was to inform participants how to (a) respond to the signals and (b) complete the Experience Sampling Forms (ESF). Each time the alarm was sounded within the class period, the teacher and the participating students to completed the Experience Sampling Form. Each Experience Sampling Form took no more than two minutes to complete.

During the orientation class session, the researcher sat in the back of the room throughout the class period in case participants had questions or issues responding to the signals. At the end of the class period, the researcher collected the orientation packets. The practice *PSESF*s and *GPTESF*s were discarded but the informed consent forms for the student and teacher participants were stored in a secure location. The background questionnaires with the participant's ID were reassembled onto the actual *PSESF* and *GPTESF* study packets for the entire data collection process. During the orientation session, participants were asked to remember their participant IDs in order to ensure they received the correct study packet.

Pre-set signals. Three alarms were pre-set by the researcher to signal at the beginning, in the middle, and near the end of class (see Table 2). The length of summer class sessions of participating schools varied from 90 minutes to 3 hours per class period. The length of each class period for School A was 110 minutes. The class period for School B was 90 minutes, and School C was 3 hours. In order to keep the data collection process consistent among the three classrooms, the researcher decided to

set the three signals within the first 2 hours of class at School C. The signals for School A alarmed every 30 minutes from the starting time, for School B every 23 minutes, and for School C every 33 minutes. When signaled, the instructor and students stopped what they were doing and completed the ESF at the same time to capture the at-the-moment experience of the participants during group piano instruction.

Table 2

Signal Schedule of Each School

School A (110 minutes per class, M/T/W/TH)			
	Signal 1	Signal 2	Signal 3
Day 1	8:55 a.m.	9:25 a.m.	9:55 a.m.
Day 2	9:03 a.m.	9:33 a.m.	10:03 a.m.
Day 3	9:08 a.m.	9:38 a.m.	10:08 a.m.
Day 4	9:17 a.m.	9:47 a.m.	10:17 a.m.
School B (90 minutes per class, M/T/W/TH)			
	Signal 1	Signal 2	Signal 3
Day 1	11:15 a.m.	11:30 a.m.	11:50 a.m.
Day 2	11:09 a.m.	11:32 a.m.	11:55 a.m.
Day 3	11:04 a.m.	11:27 a.m.	11:50 a.m.
Day 4	10:59 a.m.	11:22 a.m.	11:45 a.m.
School C (3 hours per class, T/W/TH)			
	Signal 1	Signal 2	Signal 3
Day 1	3:24 p.m.	3:57 p.m.	4:30 p.m.
Day 2	3:19 p.m.	3:52 p.m.	4:25 p.m.
Day 3	3:14 p.m.	3:47 p.m.	4:20 p.m.
Day 4	3:09 p.m.	3:42 p.m.	4:15 p.m.

Data collection. Data collection occurred over the course of four consecutive class periods. The researcher arrived 30 minutes before each class period to set up the study packets. The packets consisted of the participant background questionnaire,

which were completed during orientation, and the 12 Experience Sampling Forms, which were to be used throughout the study. At the top right corner of each *PSESF* and *GPTESF* form, the day and signal (i.e., Day 1 Signal 1, Day 1 Signal 2, Day 1 Signal 3, Day 2 Signal 1, etc.) for all four study days were pre-labeled for participants to locate the correct forms more efficiently. As student participants arrived for piano class, they picked up their *PSESF* packets prior to sitting at a keyboard. At the beginning of each class period, the researcher handed the teacher participant his or her *GPTESF* packet and the pre-programmed iPod. The researcher waited outside the classroom during class instruction. At the end of each class session, participants returned the *PSESF* and *GPTESF* survey packets in a box. After each session, the researcher went through the packets and crossed out the blank forms in the packets (usually due to absence) to assist participants to accurately identify the correct date and signals on the forms for the next session. The iPod signals were pre-programmed before the next session. The data collection procedure was repeated until all forms were collected.

Data Analysis

Data analysis was performed using version 22.0 of the Statistical Package for the Social Sciences (SPSS) software. Descriptive statistics and frequency procedures were used to analyze the following variables: (a) instructional format, (b) pacing, (c) perceived observation level, (d) perceived engagement level, (e) academic status, (f) college major, (g) prior experience, (h) frequency of practice, (i) frequency of lesson plan, and (j) class size. Analysis of Variance (ANOVA) procedures were used to answer the first research question discussed above. The Pearson Correlations were used

to address the second research question. To answer the third and fourth questions, the average means of student flow scores and teacher flow scores were compared to (a) explore the relationships between teacher flow and student flow and were used to (b) investigate whether flow rises and falls in a consistent manner throughout the course of a class. Multiple regression procedures were conducted to answer the fifth and sixth research questions.

Chapter IV

Results

The purpose of this study was to explore the flow experiences of group piano teachers and their students, as well as determine the relevance of specific classroom conditions on the flow experiences in the collegiate group piano classroom. The collection and analysis of data were based on the following research questions.

Research Questions

1. Are there significant differences in flow scores across instructional formats?
2. Is there a relationship between flow scores and (a) pacing of activity, (b) perceived level of observation, and (c) perceived level of engagement?
3. Is there a relationship between teacher flow scores and student flow scores?
4. Do teacher and student flow scores rise and fall in a regular manner through the course of a lesson?
5. Do any of the following variables predict student flow scores: (a) school level, (b) music major, (c) prior musical experience, and (d) frequency of practice?
6. Do any of the following variables predict teacher flow scores: (a) degree level, (b) class size, and (c) lesson planning?

Descriptive Statistics

Descriptive statistics from the Group Piano Teacher Questionnaire, the Piano Student Questionnaire, the Group Piano Teacher Experience Sampling Forms (*GPTESF*), and the Piano Student Experience Sampling Forms (*PSESF*) are presented in the following section.

All teacher participants completed the Group Piano Teacher Questionnaire, and all student participants, except for one, completed the Piano Student Questionnaire (see Table 1).

Table 1

Number of Teacher and Student Questionnaires Collected

	Teacher	Student	Class Size
School A	1	14	19
School B	1	10	21
School C	1	8	11
Total	3	32	51

Group piano teacher questionnaire. All group piano teacher participants ($N = 3$) were part-time faculty members at their college. Two instructors earned a Doctorate degree in piano performance and one instructor earned a Master's degree in composition with a Bachelor's degree in piano pedagogy (see Table 2).

Table 2

Academic Status of Teacher Participants

	Academic Status	Major of Degrees	Faculty Status
Teacher A	Bachelor, Master	Piano Pedagogy, Composition	Part-time
Teacher B	Bachelor, Master, Doctorate	Piano Performance	Part-time
Teacher C	Bachelor, Master, Doctorate	Piano Performance	Part-time

The instructors reported to have been teaching piano in general (e.g., private lessons, group instruction, at various settings) for six to 26 years. The number of years each has taught collegiate group piano ranged from three to 15 years (see Table 3).

Table 3

Years of Teaching Experience

	Teaching Piano in General	Teaching Collegiate Group Piano
Teacher A	26 years	15 years
Teacher B	25 years	14 years
Teacher C	6 years	3 years

Of the three group piano teachers, one instructor planned lessons frequently (i.e., between nine to 13 times throughout the semester) while the other two instructors lesson planned for every class (see Table 4).

Table 4

Amount of Lesson Planning Per Semester

	Frequency of Lesson Planning
Teacher A	Always (every class)
Teacher B	Frequently (between 9 – 13 times per semester)
Teacher C	Always (every class)

Piano student questionnaire. The majority of the students from all three schools were community college students (N = 24). Five students were enrolled in four-year undergraduate programs and two students indicated they were working on their Master's degree (see Table 5). Twenty-one of the student participants were non-music majors and six students were music majors.

Table 5

Academic Background of Student Participants (N = 31)

		Frequency
Academic Status		
	High School Student	0
	Community College Student	24
	Four-year University Student	5
	Other	2
College Major		
	Not applicable	4
	Non-Music Major	21
	Music Major	6

Although the majority of students were non-music majors or hobby students, the majority of student participants ($N = 21$) reported to have participated in other music-related classes and activities such as music theory, choir, band, orchestra, and church ensemble. Nine student participants indicated that this piano course was their first music class (see Table 6).

Table 6

Prior Musical Experience of Student Participants

	Frequency
No, this is my first music class.	9
Yes, I have participated in other music-related classes and activities.	21

Note. $N = 30$

Twenty-three students indicated they have never taken piano lessons prior to enrolling in their Beginning Piano I course, while eight students reported to have taken piano lessons prior to the course (see Table 7). Twelve of the student participants have never learned another music instrument. Nineteen students have had prior experience in playing another instrument such as guitar, drums, violin, flute, saxophone, and trumpet.

Table 7

Prior Experience of Piano and Other Instruments of Student Participants

	Frequency
No, I have not taken piano lessons prior to this course.	23
Yes, I have taken piano lessons prior to this course.	8
No, I do not play another instrument besides piano.	12
Yes, I do play another instrument.	19

Note. $N = 31$

Students reported to have enrolled in the Beginning Piano I summer course for various reasons (see Table 8). Twenty-seven students enrolled in the class because they have always wanted to learn to play the piano. Five students took the class to fulfill a degree requirement, two students perceived the course to be an easy "A" on the transcript, and three students enrolled for the following reasons: (a) to refresh piano skills, (b) to learn piano technique, and (c) to produce music.

Table 8

Reason for Enrolling in Beginning Piano I

	Frequency
I have always wanted to learn to play the piano.	27
I need to take this course to fulfill a degree requirement.	5
I am taking this course for an easy "A" on the transcript.	3
Other reasons	3

Note. $N = 37$. Some student participants selected more than one reason for enrollment.

Table 9 shows the number of days per week students practice outside the classroom and the amount of time spent per practice session. On average, students spent two to five days practicing the piano outside of class. The amount of time spent per practice session varied from 15 minutes to more than 1 hour, and the majority of students devoted 15 to 45 minutes per practice session.

Table 9

Frequency of Days and Hours of Practice from Student Questionnaire

	Frequency
Days per Week	
0 days	3
1 day	2
2 days	6
3 days	5
4 days	4
5 days	8
6 days	0
7 days	3
Hours of Practice per Practice Session	
0 – 15 minutes	1
15 – 30 minutes	8
30 – 45 minutes	8
45 – 60 minutes	6
More than 60 minutes	6

Note. Cumulative percentages were not included since the calculation was based on multiple *PSESF* responses per student participant.

Experience sampling forms. In addition to the questionnaires, teacher and student participants also completed a series of Experience Sampling Forms (ESF). For the purpose of this study, three pre-programmed signals occurred in each class period for four consecutive class days. All teacher participants responded to the 12 signals by completing the 12 Group Piano Teacher Experience Sampling Forms (*GPTESF*) (see Table 10). Student participants completed the Piano Student Experience Sampling Forms (*PSESF*) at the same time. Not all participating students completed every *PSESF*. Missing student *PSESF* data were due to various reasons such as (a) absence, (b) late attendance, (c) left class early, (d) decided not to respond a signal, or (e) declined to participate in the study, resulting in an 82% response rate.

Table 10

Number of Teacher and Student Experience Sampling Forms Collected

	Missing Teacher *GPTESF*	Teacher *GPTESF* collected	Missing Student *PSESF*	Student *PSESF* collected
School A	0	12	27	141
School B	0	12	27	93
School C	0	12	15	81
Total	0	36	69	315

Group piano teacher experience sampling form (*GPTESF*). The teacher *GPTESF* was designed to measure four classroom variables: (a) instructional format, (b) pacing of activity, (c) perceived level of observation from students, and (d) perceived level of student engagement and learning.

***Instructional format* (from *GPTESF*).** Table 11 shows that teacher-led group instruction ($N = 26$) was the most frequently used instructional format. The second most commonly used instructional format was self-practice session ($N = 5$). Only one teacher indicated a self-practice session ($N = 5$) and group performance ($N = 2$) as an instructional format when signaled. The other teachers mainly selected two types of instructional formats: (a) teacher-led group instruction and (b) one-on-one instruction. None of the teachers incorporated practice sessions in groups of two or more or individual student performances as instructional formats.

Table 11

Frequency of Instructional Format from the GPTESF (Teachers)

	Frequency
Teacher-led group instruction	26
One-on-one instruction	3
Self-practice session	5
Practice session in groups (2 or more)	0
Group performance	2
Individual student performance	0

Note. $N = 36$. Cumulative percentages were not included since the calculation was based on multiple *PSESF* responses per student participant.

***Classroom variables* (from *GPTESF*).** Table 12 provides the descriptive statistics for the three classroom variables from the *GPTESF*. Teachers seemed to consistently agree the (a) pacing of instructional activities was just right ($M = 4.57$), (b) students observed them carefully ($M = 4.69$), and (c) students seemed to be engaged in the learning process ($M = 4.66$).

Table 12

Descriptive Statistics of Classroom Variables from the GPTESF (Teachers)

	M	*SD*
The pacing of the instructional activity was just right.	4.57	0.61
The students were observing my instructions carefully.	4.69	0.58
The students seemed to be engaged and learning.	4.66	0.59

Note. $N = 35$. The teacher participants responded to each statement using a Likert-type scale ranging from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*).

***Nine dimensions of flow* (from *GPTESF*).** Table 13 shows the descriptive statistics for the nine dimensions of teacher flow as measured by the *GPTESF*. The highest rated flow dimensions were (a) feedback clarity ($M = 5.0$), (b) concentration ($M = 5.0$), and (c) sense of control ($M = 5.0$). The lowest mean response was balance of challenge and skill ($M = 2.0$). One possible explanation for the low score on the statement "I was challenged but I believe my skills would allow me to meet the challenge." may be due to the perception that the instructors no longer felt challenged due to their years of experience.

Table 13

Descriptive Statistics of the Nine Dimensions of Flow from the GPTESF (Teachers)

	N	*M*	*SD*
Balance of challenge and skill	33	2.00	1.63
Goal clarity	35	4.89	0.67
Feedback clarity	35	5.00	0.00
Concentration	35	5.00	0.00
Sense of control	35	5.00	0.00
Loss of self-consciousness	35	4.92	0.28
Transformation of time	35	3.39	1.27
Merging of action and awareness	35	4.19	1.19
Autotelic experience	35	4.81	0.52

Note. The teacher participants responded to each statement using a Likert-type scale ranging from 1 (S*trongly Disagree*) to 5 (S*trongly Agree*).

Table 14 shows the mean flow score for teacher participants was $M = 4.37$, which indicates that the group piano teachers experienced flow while teaching class piano.

Table 14

Mean Flow Scores from the GPTESF (Teachers)

	N	*M*	*SD*
Teacher flow score	35	4.37	0.32

Piano student experience sampling form (from *PSESF*). The student *PSESF* was similar to the teacher *GPTESF* in that it included the same four classroom variables: (a) instructional format at the moment, (b) pacing of activity, (c) perceived level of observation from the teacher, and (d) perceived level of teacher enjoyment.

***Instructional format* (from *PSESF*).** Table 15 shows that teacher-led group instruction ($N = 215$) was most frequently reported instructional format reported by the students. Self-practice ($N = 61$) was the second most common instructional format, followed by one-on-one instruction ($N = 22$). The results of the instructional format used in the classroom were cross-validated between the student and teacher participants.

Even though none of the teacher participants selected practice session in groups as an instructional format, the students who marked practice session in groups ($N = 5$) when signaled may have been collaborating with another student during self-practice activities. Also, students who indicated group performance ($N = 9$) when signaled may have perceived some of the teacher-led group instruction activities as group performance whereas the teacher participants perceived some of the group performances as teacher-led instruction. Students who marked individual student performance ($N = 215$) when signaled may have perceived playing for the instructor as an individual performance, whereas the instructor perceived the instructional format as one-on-one instruction.

Table 15

Descriptive Statistics of Instructional Format from the PSESF (Students)

	Frequency
Teacher-led group instruction	215
One-on-one instruction	22
Self-practice session	61
Practice session in groups (2 or more)	5
Group performance	9
Individual student performance	3

Note. $N = 315$. The instructional formats related to practice session in groups, group performance, and individual student performance were omitted from statistical analysis due to low response rates. Cumulative percentages were not included since the calculation was based on multiple *PSESF* responses per student participant.

***Classroom variables* (from *PSESF*).** Table 16 provides descriptive statistics for the three classroom variables measured the *PSESF*. Student participants seemed to agree the (a) pacing of instructional activities were just right ($M = 4.25$), (b) teachers were observing them carefully ($M = 4.38$), and (c) teachers seemed to be enjoying what they were doing ($M = 4.53$). When compared to the mean scores for the classroom variables from the teacher *GPTESF* (see Table 12), the mean scores for classroom variables from the student *PSESF* were slightly lower.

Table 16

Descriptive Statistics of Classroom Variables from the PSESF (Students)

	N	*M*	*SD*
The pacing of the instructional activity was just right.	314	4.25	0.79
The teacher was observing us carefully.	313	4.38	0.84
The teacher seemed to be enjoying what he/she was doing.	312	4.53	0.76

Note. The student participants responded to each statement using a Likert-type scale ranging from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*).

Nine dimensions of flow (*from *PSESF). Table 17 shows the descriptive statistics for the nine dimension of flow from the student *PSESF*. The highest rated flow dimension was goal clarity (M = 4.45), followed by concentration (M = 4.36) and loss of self-consciousness (M = 4.35). The lowest mean response was transformation of time (M = 3.58).

Table 17

Flow Score of the Nine Dimensions from the PSESF (Students)

	N	*M*	*SD*
Balance of challenge and skill	314	4.17	1.00
Goal clarity	315	4.45	0.69
Feedback clarity	315	4.30	0.80
Concentration	315	4.36	0.71
Sense of control	314	4.18	0.83
Loss of self-consciousness	315	4.35	0.88
Transformation of time	315	3.58	1.06
Merging of action and awareness	313	3.80	1.01
Autotelic experience	311	4.13	0.91

Note. The student participants responded to each statement using a Likert-type scale ranging from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*).

Table 18 shows the mean flow scores from the student *PSESF* was $M = 4.15$, which indicates that the students experienced flow in group piano.

Table 18

Flow Scores from the PSESF (Students)

	N	*M*	*SD*
Student flow score	315	4.15	0.54

First Research Question

A one-way analysis of variance (ANOVA) was conducted to determine if significant differences in flow existed among scores across instructional format in the collegiate group piano classroom. The instructional format included six categories: (a) teacher-led group instruction, (b) one-on-one instruction with teacher, (c) self-practice session, (d) practice session in groups of two or more, (e) group performance, and (f) individual student performance. Due to the low number of responses, the following instructional formats were not included in the ANOVA: (a) practice session in groups of two or more, (b) group performance, and (c) individual student performance. Results of the ANOVA indicated no significant differences in student flow scores across instructional format, $F\,(2, 295) = 2.43$, $p = .09$.

Furthermore, due to the small number of teacher participants, an ANOVA was not performed. However, relationships between instructional format and teacher flow scores were examined. Since none of the teacher participants selected practice in groups and individual student performance, and only one teacher indicated self-practice session and group performance as a form of instructional format, this study only examined the relationship between teacher flow scores and the following instructional formats: (a) teacher-led group instruction and (b) one-on-one instruction with teacher (see Figure 4.1). Figure 4.1 indicates that Teacher A and Teacher C experienced greater flow during group instruction rather than one-on-one instruction with students, while Teacher B was in greater flow during one-on-one instruction with students.

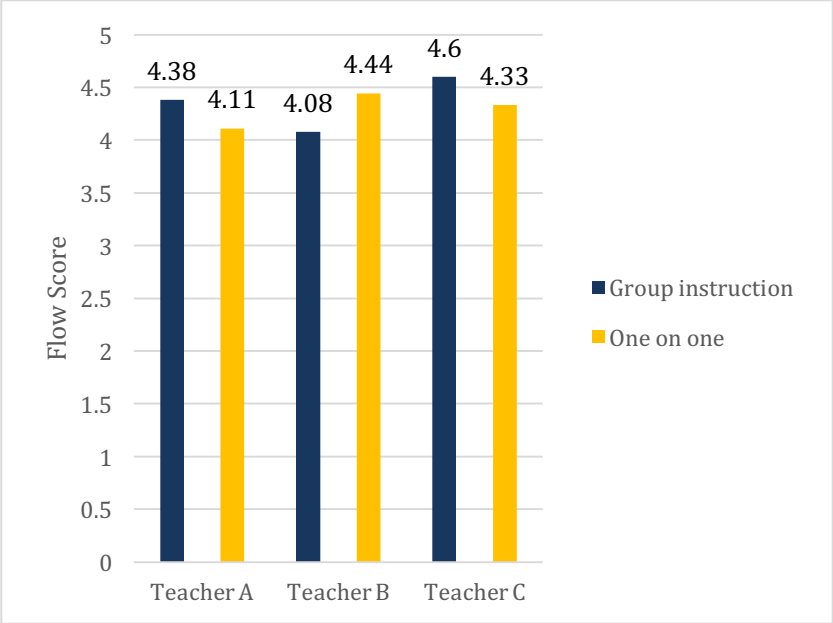


Figure 4.1. Comparison of teacher flow scores during teacher-led group instruction and one-on-one instructions.

Second Research Question

Pearson product-moment correlation coefficients were calculated among the following classroom variables for teacher and student participants: (a) pacing of activity, (b) perceived level of observation, and (c) perceived level of enjoyment and engagement.

Students. Results of the correlation analyses from the student *PSESF* presented in Table 19 show that all correlations were statistically significant: (a) pacing of activity and student flow scores ($r = .40$, $p < .01$), (b) level of teacher observation and student flow scores ($r = .30$, $p < .01$), and (c) perceived level of teacher enjoyment and student flow scores ($r = .22$, $p < .01$).

Table 19

Correlation of Student Flow Score and Classroom Variables from PSESF (*N* = 313)

	Observation level	Teacher enjoyment	Student flow score
Pacing	.50**	.46**	.40**
Observation level		.55**	.28**
Teacher enjoyment			.22**
Flow score			

** Correlation is significant beyond the 0.01 level (2-tailed).

Teachers. Results of the correlation analyses from the teacher *GPTESF* revealed negative correlations between (a) pacing and teacher flow score and (b) student engagement and teacher flow score (see Table 20). Neither correlation was statistically significant. There was a significant negative correlation between perceived level of student observation and teacher flow scores.

Table 20

Correlation of Teacher Flow Score and Classroom Variables from GPTESF (*N* = 35)

	Observation level	Student engagement	Teacher flow score
Pacing	.36*	.56**	-.24
Observation level		.79**	-.44**
Student engagement			-.22
Flow score			

*Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).

Third Research Question

To examine the relationship between teacher flow scores and student flow scores, the average flow scores of teachers and students within each group piano classroom were calculated and compared.

School A. Figure 4.2 compares the flow scores of Teacher A and the students of Teacher A (see Figure 4.2).

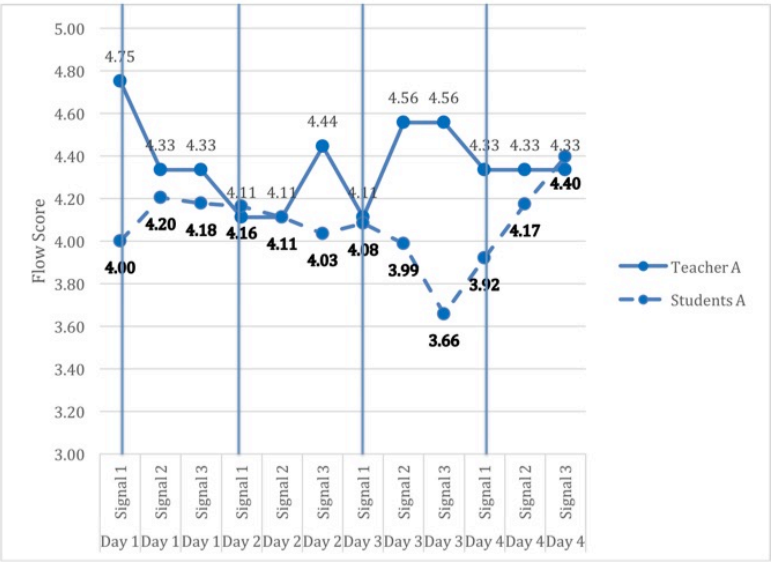


Figure 4.2. Comparison of Teacher A and student flow scores by signal.

Results indicated that the overall flow scores for Teacher A were higher than the student flow scores. On Day 1, the flow level of Teacher A (M = 4.75) started out higher than the flow level of the students (M = 4.0) but as the lesson continued, the student flow scores (M = 4.20) increased as Teacher A's flow score (M = 4.33) decreased. For Day 2 and Day 3, the teacher and student participants' flow pattern were similar in the beginning of the lesson but by the end of the lesson, the teacher's level of flow increased and the students' level of flow decreased. On Day 4, Teacher A's flow

level remained consistent ($M = 4.33$), whereas the students' flow level gradually increased from $M = 3.92$ to $M = 4.17$ *to* $M = 4.40$ by the end of the lesson. Overall, there was no regular pattern of flow within class periods for teachers or students.

School B. Figure 4.3 compares the flow scores of Teacher B and the students of Teacher B (see Figure 4.3). Results show that the overall flow scores of Teacher B were lower than the student flow scores, which indicates that students at School B were in greater flow than their teacher. The flow scores of students gradually increased each day (ranging from $M = 3.94$ to $M = 4.48$), whereas the flow scores of Teacher B remained fairly consistent throughout (ranging from $M = 3.89$ to $M = 4.11$). There is the possibility that Teacher B may have stopped cooperating with the study on Day 2. The overall flow pattern of Teacher B and students of Teacher B were similar and consistent throughout the four study days.

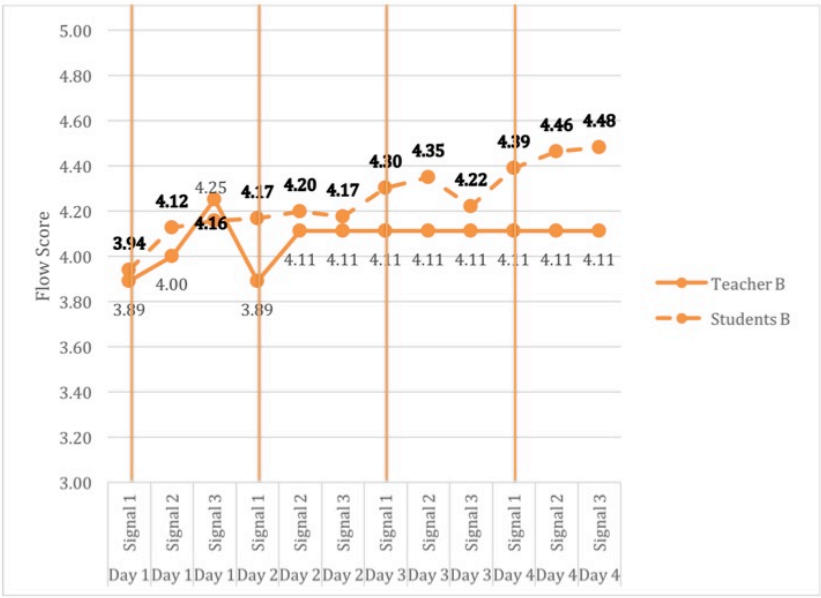


Figure 4.3. Comparison of Teacher B and student flow scores by signal.

School C. When interpreting Figure 4.4, the Summer schedule of School C needs to be considered. School C had a different Summer session schedule compared to the other two schools. The class periods at School C were 3 hours per class session, while the other two schools were 90 to 110 minute sessions. Therefore, the researcher set the three signals to alarm within the first 2 hours of class at School C in order to keep the research period consistent among the other classrooms. Also, School C met three times a week during the Summer session whereas the other two schools met four times a week.

Figure 4.4 compares the flow scores of Teacher C and the students of Teacher C (see Figure 4.4). Similar to the results indicated by School A, the flow scores of Teacher C (ranging from $M = 4.44$ to $M = 4.56$) were higher than the flow scores of students in the classroom (ranging from $M = 4.01$ to $M = 4.22$). The beginning of class on Day 4 was the only day the flow level of Teacher C ($M = 3.89$) was below the students' flow level ($M = 4.39$). However, by the end of Day 4, the students' flow level gradually decreased to $M = 4.22$ and the teacher's flow level increased to $M = 4.56$. There were three incidents when the relationship between Teacher C and student flow scores were positive. On Day 1 and Day 2 between the first and second signals, the teacher and student flow scores increased together. On Day 3, between the second and third signal, the teacher and student flow level decreased together. In other cases, the relationship between the teacher and student flow scores at School C was negative. The overall flow scores of Teacher C were greater than the flow scores of the students.

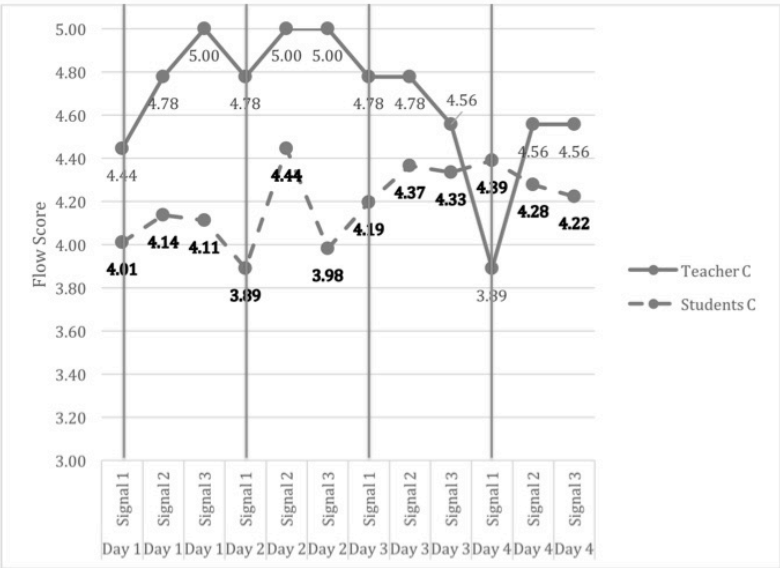


Figure 4.4. Comparison of Teacher C and student flow scores by signal.

In summary, there were no predictable patterns for the relationship between group piano teacher and student flow levels, except teacher flow scores were generally higher than the student flow scores.

Fourth Research Question

To investigate whether the teacher and student flow scores rose and fell consistently throughout the course of a lesson, the average group piano teacher and student flow scores of each signal across four consecutive class days were calculated.

School A. In Figure 4.2, results indicate that the flow level of Teacher A decreased by the end of Day 1 but on Day 2 and Day 3, Teacher A's flow level increased by the end of the lesson. The student flow scores always gradually decreased toward the end of class on Day 1 through Day 3. However, on Day 4, the flow level among students in Teacher A's classroom increased by the end of the lesson (from *M* =

3.92 to *M* = 4.40 toward the end of lesson) while the flow level of Teacher A (*M* = 4.33) remained consistent throughout. Figure 4.2 further shows on Day 2 and Day 3, the teacher flow scores (*M* = 4.11, *M* = 4.11) and student flow scores (*M* = 4.16, *M* = 4.08) started out at approximately the same level at the beginning of the lesson, although teacher and student flow levels moved in opposite directions as the lesson continued (i.e., when flow level of teacher increased, the flow level of students decreased).

School B. Figure 4.3 shows on Day 1, the flow level of Teacher B and the students of Teacher B were positive as both scores gradually increased by the end of Day 1 and Day 2. Although the flow level exhibited by Teacher B remained consistent throughout Day 3 and Day 4 (*M* = 4.11), the flow level exhibited by students did rise and fall within the lesson on Day 2 (*M* = 4.17 – 4.20 – 4.17) and Day 3 (*M* = 4.30 – 4.35 – 4.22), and continued to gradually reach the highest level of flow on Day 4 (*M* = 4.39 – 4.46 – 4.48). The flow level of students at School B was always at the highest point in the middle of the lesson (Signal 2).

School C. As shown in Figure 4.4, the overall flow level of Teacher C was generally highest toward the end of the lessons, whereas the overall flow level of Teacher C's students was highest toward the middle of the lesson. Results indicated that teacher and student flow scores at School C tended to rise together between the beginning and middle of the class period. From the middle of the class period to the later part of the lesson, the flow level of students had the tendency to fall while the flow level of Teacher C continued to rise.

In summary, there was no consistent pattern in the rise and fall of the teacher and student flow scores throughout the course of a group piano class session. The student flow scores did not always coincide with the teacher flow scores. Although the rise and fall characteristics within each group piano classroom differed, the majority of the participants across all three classrooms experienced a greater level of flow toward the middle and end of the lesson.

Fifth Research Question

A linear multiple regression analysis was conducted to determine if any of the following variables were statistically significant predictors of student flow scores: (a) school level, (b) music major, (c) prior musical experience, and (d) frequency of practice. The results of this analysis indicated that the regression model was not significant, R^2 = .11, adjusted R^2 = -.03, $F(4, 25) = .80$, $p = .54$ (see Table 21).

Table 21

Summary of the Linear Regression Analysis (N = 31)

Variable	*B*	SE	β	*p*
School Level	-0.07	0.16	-0.1	0.65
Music Major	0.025	0.26	0.02	0.93
Prior Musical Experience	0.019	0.01	0.33	0.13
Frequency of Practicing	-0.001	0.01	-0.03	0.91

Note. R^2 = .11, $F(4, 25) = .80$, $p = .54$

Sixth Research Question

A linear multiple regression analysis was conducted to determine if the following variables predicted teacher flow scores: (a) degree level, (b) class size, and (c) lesson plan. Due to a small sample size and low variability, the regression model was not significant.

Summary of Results

Participants' responses for the (a) Group Piano Teacher Questionnaire ($N = 3$), (b) Beginning Piano I: Piano Student Questionnaire ($N = 31$), (c) Piano Student Experience Sampling Form ($N = 315$), and (d) Group Piano Teacher Experience Sampling Form ($N = 36$) were generally positive. Missing student *PSESF* data occurred due to various reasons such as (a) absence, (b) late attendance, (c) left class early, or (d) decided not to respond to a signal.

All group piano teacher participants were part-time faculty members at their college, and earned at least a Master's degree in music. Two of the teachers had been teaching piano for approximately 26 years and one teacher had been teaching piano for six years. All teachers had prior experience in collegiate group piano teaching. Two teachers planned their lessons for every class and the third teacher lesson planned for almost every class (approximately nine to 13 times per semester). The majority of the student participants were community college students and non-music majors.

While many of the student participants participated in other music-related classes and activities such as choir, music theory, and church ensembles, the majority of students reported to never have taken piano lessons prior to the Beginning Piano I course. A majority of the students reported to have enrolled in the Beginning Piano I

class due to a desire to learn to play the piano. Only 23% of student participants enrolled for reasons such as needing to fulfill a degree requirement or to receive an easy "A" on the transcript. On average, students enrolled in the summer Beginning Piano I course spent at least 15 minutes to 45 minutes per practice session and practiced the piano outside of class at least two to five days out of the week.

The overall flow scores of the participants were above the midpoint of the scale, suggesting that teachers and students experienced flow in the collegiate group piano classroom. Data from the Experience Sampling Forms (*PSESF* and *GPTESF*) indicated that overall, teacher flow scores were higher than the student flow scores. Feedback clarity, concentration, and sense of control were the highest scored flow dimensions indicated by the teacher participants. As for the student participants, goal clarity, concentration, and loss of self-consciousness were the highest scored flow dimensions.

The most common instructional format conducted in the collegiate group piano classroom was teacher-led group instruction and one-on-one instruction. Group practice session, individual student performance, and group performance were instructional formats rarely conducted in piano classes. There were no significant differences in student flow scores across instructional format. Two teachers were in greater flow during teacher-led group instruction whereas the third teacher achieved higher flow during one-on-one instruction.

Results of the correlation analyses showed statistically significant positive correlations between students' flow scores and pacing of activity, perceived level of teacher observation, and perceived level of teacher enjoyment. In contrast, the relationships between teacher flow scores and pacing of activity, perceived level of

student observation, and perceived level of student engagement revealed negative correlations. For teachers, the only statistically significant negative correlation occurred between student observation level and teacher flow scores. Data suggests that teacher participants experienced less flow when they perceived greater levels of student observation.

Flow scores for teachers and students varied for each class and did not always coincide. Also, the rise and fall characteristics within each lesson were different and not predictable. Some days the flow scores decreased by the end of the lesson while other days the flow scores gradually increased toward the end of the lesson. However, based on the average flow scores, the participants across all three group piano classrooms appeared to experience a greater level of flow toward the middle and the end of a lesson.

Results of a linear multiple regression analysis for this study indicated that the variables of (a) student school level, (b) music major, (c) student prior musical experience, (d) teacher degree level, (e) class size, and (f) teacher lesson plan were not statistically significant predictors of student and teacher flow scores in the group piano classroom.

Chapter V

Discussion

Summary of the Study

The purpose of this study was to explore the flow experiences of group piano teachers and their students, as well as determine the relevance of specific classroom conditions on the flow experiences in the collegiate group piano classroom. The specific classroom conditions were (a) pacing of activity, (b) perceived observation level, and (c) perceived engagement level. Variables as reported by students included (a) academic status, (b) music major, (c) prior musical experience, (d) reason for enrolling, and (e) frequency of practicing. Variables as reported by teachers were (a) degree status, (b) class size, and (c) lesson planning.

The study took place during the Summer 2015 semester. Participants were drawn from three community colleges in Southern California. Participants completed the appropriate Group Piano Teacher Questionnaire and Beginning Piano I: Piano Student Questionnaire at the start of the study. The Experience Sampling Method was then performed in three collegiate group piano classrooms, one classroom per community college. Teachers (N = 3) and their students (N = 32) participated in the study for four consecutive class periods. Three pre-programmed signals sounded off during each class to capture the quality of the teaching and learning experiences of both teachers and students in the group piano classroom. After each signal, the teacher participants completed the Group Piano Teacher Experience Sampling Form (*GPTESF*) and the student participants completed the Piano Student Experience Sampling Form

(*PSESF*). These measures were adapted from the Flow State Scale form (Jackson & Marsh, 1996). The response rates were 100% for the *GPTESF* and 82% for the *PSESF*.

Descriptive statistics and frequency procedures were used to analyze the following information: (a) instructional format, (b) pacing, (c) perceived observation level, (d) perceived engagement level, (e) academic status, (f) college major, (g) prior experience, (h) frequency of practice, (i) frequency of lesson plan, (j) class size, (k) teacher flow scores, and (l) student flow scores. The means for student flow and teacher flow were compared to determine whether flow levels rose and fell in a consistent manner throughout the course of a group piano class session.

Analysis of Variance (ANOVA) procedures were used to determine if significant differences existed between instructional format and student flow scores. In addition, Pearson product-moment correlation coefficients were used to examine how teacher and student flow scores were related to (a) pacing of activity, (b) perceived level of observation, and (c) perceived level of enjoyment and engagement among teacher and student flow scores. A linear multiple regression analysis was performed to determine if any of the following variables were statistically significant predictors of student flow scores: (a) student school level, (b) music major, (c) prior musical experience, and (d) frequency of practice. The second linear multiple regression analysis was performed to determine if any of the following variables were statistically significant predictors of teacher flow scores: (a) degree level, (b) class size, and (c) lesson plan.

Results indicated students and teachers did experience flow in the collegiate piano classroom, even though their flow scores did not rise and fall together in a

predictable manner. Instructional format did not prove to have a significant influence on student and teacher flow scores. However, the pacing of the activity, perceived level of teacher observation, and perceived level of teacher enjoyment shared significant positive correlations with student flow scores. The one statistically significant negative correlation occurred between teacher flow scores and perceived level of student observation.

Discussion

Instructional format. Results indicated no significant differences among student flow scores across instructional format. However, the overall mean for student flow scores (M = 4.15) indicated that students did experience flow in the group piano classroom. Previous research using the Experience Sampling Method to measure flow state across various academic subjects indicated fine art classes inherently created a structure for engagement and growth (Csikszentmihayli & Larson, 1984). Indeed, the setting of the collegiate group piano classroom could easily encourage engagement since students receive constant auditory, cognitive, kinesthetic, and visual feedback from their keyboards during group instruction or self-practice activities.

It is notable the two most frequently used instructional formats indicated by the teachers were (a) teacher-led group instruction and (b) one-on-one instruction. In addition, two instructors experienced higher flow levels during group instruction, whereas the third instructor experienced higher flow levels during one-on-one instruction. Based on observations made by the researcher during the orientation sessions, the classrooms for the two teachers who experienced higher flow during group

instruction included individual headsets for each student. These two teachers were able to instruct the class while visually observing the students without actually hearing what the students were playing. In contrast, the third teacher's classroom did not include headsets. Interestingly, this teacher experienced higher flow during one-on-one instruction. This teacher heard the students play aloud at the same time while teaching to the entire group. It is possible this teacher felt more focused when listening to the progress of students during one-on-one instruction than during group instruction.

Classroom variables. It was interesting to observe the selected classroom variables that affected student flow scores did not necessarily have a similar influence on teacher flow scores. Results from the student *PSESF* revealed statistically significant positive correlations between student flow scores and all of the following selected classroom variables: (a) pacing of activity, (b) perceived level of teacher observation, and (c) perceived level of teacher enjoyment. However, data from the teacher *GPTESF* indicated the perceived level of student observation was the only classroom variable that showed statistically significant negative correlations with teacher flow scores.

Students' perception of teacher behaviors. It is notable that as long as the students perceived their teacher's behaviors as flow promoting actions, students were able to achieve flow even when teachers were not experiencing flow at that moment. Previous literature also found that students often attributed their engagement level to their teachers' actions, especially when the teachers (a) seemed to care about the students and (b) presented activities in a clear and enthusiastic manner (Bakker, 2005; Cothran & Ennis, 2002; Csikszentmihlayi, Rathunde, & Whalen, 1993). For the present

study, students indeed achieved higher flow scores when they (a) felt the pacing of the activity was just right, (b) perceived the teacher observing them carefully, and (c) believed the teacher was enjoying what he or she was doing. Due to a small sample size, the results of this study cannot be generalized to the entire population. Nonetheless, teachers should be cognizant of the possibility that students experience classroom activities differently than the instructor.

Teachers' perception of student behaviors. Correlations were not observed between teacher flow scores and (a) pacing of activity or (b) perceived level of student engagement. This is in contrast to previous work, which revealed significant positive relationships between teacher flow experience and (a) student engagement (Caouette, 1995; Chang, 1996; Frase, 1998; Gunderson, 2003) and (b) pacing of activity (Tseng, 2013). It is possible that contrasting results may be due to different data collection methods (interviews vs. surveys) and various analytical approaches. Previous research methods were mainly interview-based; the present study employed surveys and statistical analysis.

Level of observation. In the present study, a significant negative correlation between perceived level of student observation and teacher flow scores was observed. Teachers indicated lower flow scores when they perceived a high level of student observation. A previous interview conducted by Tseng (2013) revealed one teacher expressed difficulty in knowing whether students were engaged by observing their facial expressions and nonverbal gestures. Instead, student verbal responses gave the teacher a better sense of students' level of understanding. In the present study, the teachers may have perceived students' observations as an indicator of confusion,

especially if the students' facial expressions appeared to be "blank looks". Furthermore, students in the group piano classroom are typically observing the music score and their hand position at the keyboard while listening to the teacher's instructions. Therefore, when piano students do look away from the score and back toward the teacher, it may imply confusion or lack of understanding. If these were indeed the types of feedback perceived by the instructor, it could explain why the teacher flow scores decreased when perceiving higher levels of student observation.

On the contrary, student flow scores increased when they perceived the teachers were observing them carefully. Jondow (2001) also revealed a teacher could promote musical flow experiences by focusing on the students and their needs throughout the class period. La Combe (2003) addressed the importance of teacher observation as a form of personal delivery, in which instructors should look at all students around the classroom when teaching. In the present study, students reported feedback clarity ($M = 4.30$) as the fourth highest dimension score. It is possible that careful teacher observation in the group piano classroom provided a type of non-verbal feedback, which allowed students to perceive the instructor assessing their progress.

Pacing of activity. When students reported the pacing of the activity was just right, their flow scores also increased. This result is consistent with previous literature, which indicated the importance of having the right amount of time to complete a task when achieving flow in the classroom (Cassie, 2011; Di Bianca, 2000; Massimini, Csikszentmihalyi, & Delle Fave, 1988). According to Csikszentmihlayi, Rathunde, and Whalen (1993), when teachers paced class activities according to students' needs, students were more likely to experience a greater level of flow when learning. For the

current study, the positive correlation between student flow scores and pacing of activity could imply the group piano instructors provided sufficient time for students to acquire a concept or skill, while not spending too much time on less challenging activities.

Comparison of teacher flow scores and student flow scores. Results of previous research (Bakker, 2005; Di Bianca, 2000; Zhu, 2001) indicated a variety of patterns, both positive and negative, among teacher and student flow states in various academic settings and courses. For example, Bakker (2005) revealed that when the teacher experienced flow, the students also experienced flow. On the other hand, Di Bianca (2000) discovered students did not necessarily experience flow with the teacher, especially when the activity was teacher-paced. In the present study, the majority of flow patterns between students and teachers did not coincide in a consistent manner.

Based on observations among the three group piano classrooms, there were moments when teacher and student flow scores converged and diverged. On occasion, teacher and student flow scores would start on similar levels at the beginning of class but end on different flow levels, or vice versa. Therefore, instructors should be aware that teacher flow and student flow might not always coincide. Di Bianca (2000) also revealed the teacher and student flow levels were not always positively correlated. However, the average flow scores for both students and teachers in the present study were above the midpoint of the scale, suggesting participants experienced flow in the group piano classroom.

While the rise and fall of flow characteristics within each group piano classroom differed, it is important to note that teachers and students appeared to experience a

greater level of flow toward the middle and the end of a lesson. On average, 42% of the students' responses indicated the highest flow scores occurred during the second signal (i.e., middle of the lesson) and 42% of the teachers' responses indicated the highest flow scores during the third signal (i.e., toward the end of class). Other studies reported similar results from students who experienced higher flow in the later segments of music rehearsals (Jaros, 2008; Kraus, 2003).

It is beneficial for teachers to be cognizant of the flow levels and flow cycles in their classroom. In this study, teacher and student participants achieved higher flow scores earlier in the school week (e.g., Monday and Tuesday) and lower flow scores toward the end of the school week. This was also the case for Jaros (2008) who discovered the flow scores for high school choir students were higher earlier in the week. By developing an awareness of the potential for decreased student flow levels, teachers could devise group piano activities to support flow-promoting behaviors throughout the week. As long as the flow cycle does not move in a downward spiral, high and low flow occurrences throughout the semester can be expected in any classroom.

Although teacher and student flow levels may not always coincide, it remains important for teachers to achieve flow in the group piano classroom. Teachers are responsible for creating the learning environment. Csikszentmihalyi (1997) discovered that teachers who achieved flow in the classroom tended to (a) enjoy their interactions with the students and (b) focus on the student needs in order to enhance student learning. Also, students were more likely to be in flow when the teacher experienced flow while teaching (Csikszentmihalyi, 1997). This may suggest teachers who achieve

flow in the group piano classroom are more likely to be motivated in creating opportunities and activities for students to engage in musical development throughout the semester.

Additional findings. Descriptive analyses from the Piano Student Questionnaire were further examined to generate supplementary information on students' practice habits and prior musical experiences. Based on additional observations, the number of days' students practiced outside the classroom may influence student flow scores. Students representing the lowest average flow score ($M = 3.76$) did not practice at all outside of class, whereas students representing the highest average flow score ($M = 4.34$) practiced everyday outside of class. However, due to the inconsistency of the amount of practice hours spent outside of class and student flow scores, it remains inconclusive whether more time spent practicing generates higher student flow scores. Perhaps an examination based on the quality of practice may be more important than examining the quantity of practice (Cremaschi, 2012; Parente, 2011).

Furthermore, it is of interest that music majors ($N = 6$) achieved a slightly higher average flow score ($M = 4.25$) than non-music majors ($N = 21$, $M = 4.15$). Also, music majors practiced more outside of class (five days a week for 30-45 minutes per session) compared to non-music majors (three days a week for 30-45 minutes per practice session). Perhaps more frequent practice is naturally built into the daily regimens of music majors.

Further observations were explored from the Piano Student Questionnaire: (a) years of prior experience in piano, (b) years of experience on playing another

instrument, and (c) years of participation in other musical activities. The observations were not based on statistical tests. Additional findings from the Piano Student Questionnaire indicated:

- Students who reported taking prior piano lessons experienced a slightly higher level of flow than students who had never taken piano lessons.
- Students who reported prior experience playing another instrument besides the piano also achieved higher flow than students who had never taken lessons on another instrument.
- Students who reported prior participation in musical activities (e.g., church ensemble, choir, band) achieved slightly higher flow scores than students who have never participated in musical activities.
- Music majors practiced more hours outside of class than non-music majors.
- Music majors achieved a slightly higher average flow score than non-music majors (i.e., hobby students).

Implications

The overall results indicated students and teachers consistently experienced flow in the collegiate group piano classroom. The student *PSESF*s and teacher *GPTESF*s seemed to capture classroom conditions and flow dimensions that could provide group piano instructors with feedback necessary to gauge students' learning experience and to assess their own teacher experience throughout the semester.

Goal clarity for students. According to Csikszentmihalyi (1991), teachers have the ability to turn classroom activities into flow experiences by understanding and applying conditions that motivate people to learn.

> [Teachers] do this by being sensitive to students' goals and desires, and they are thus able to articulate the pedagogical goals as meaningful challenges. They empower students to take control of their learning; they provide clear feedback to the students' efforts without threatening their egos and without making them self-conscious. They help students concentrate and get immersed in the symbolic world of the subject matter. As a result, good teachers still turn out [students] who enjoy learning, and who will continue to face the world with curiosity and interest. (Csikszentmihalyi, 1991, p. 86)

For the current study, the top five flow experience dimensions as reported by students when achieving flow in group piano class were (1) goal clarity, (2) concentration, (3) loss of self-consciousness, (4) feedback clarity, and (5) sense of control. These results support the research of Csikszentmihalyi as described above. As such, collegiate group piano teachers should be encouraged to reflect upon ways to build and maintain an upward momentum of flow experiences in their classrooms.

Since goal clarity was the highest rated flow dimension for students, teachers are encouraged to design a background questionnaire for students to complete at the beginning of the semester. For instance, determining what students would like to accomplish through their enrollment in the class could provide vital information for instructors to better communicate pedagogical goals and customize their lesson plans to fit student needs.

Feedback clarity for teachers. Results from the teacher *GPTESF*s indicated (a) feedback clarity, (b) concentration, (c) sense of control, (d) loss of self-consciousness, and (e) goal clarity were the five highest flow dimensions. These five dimensions were similar to the five flow dimensions reported by piano students. The

main difference between the two groups was feedback clarity (ranked first for teachers) and goal clarity (ranked first for students).

Results from the current study indicated that teachers reported lower flow scores when they perceived the students were observing them carefully. In contrast, previous research by Frase (1998) indicated that teachers experienced higher flow when they perceived their students were attentive and engaged. This suggests the perceived level of student observation may not be a clear indication of student understanding for teachers in the group piano classroom. The nature of a group piano environment is structured so that students are typically looking at their music for most of the class period. Therefore, it is suggested that classroom piano teachers may need to explore others sources of feedback (e.g., students' hand position on the keyboard) to gauge student understanding. It is important for group piano teachers to know the type of student feedback necessary to achieve high levels of flow.

Emergent motivation. According to Csikzentmihalyi (1985), emergent motivation is "triggered by specific experiences which provide unique rewards never before encountered" (p. 99). Emergent motivation occurs due to the interaction between an individual and the environment. For example, a student may enter piano class in a state of apathy, but by the end of the lesson, the student could be engaged in the musical activities.

As facilitators of the classroom environment, teachers need to know there is an experiential process that allows anyone to achieve flow. Findings from this study indicated students achieved greater flow scores when (a) the pacing of the activity was just right, (b) the teacher observed the students carefully, (c) the teacher seemed to be

enjoying what he or she was doing, and (d) the goal of the activity was clear to students. Students can develop positive emergent behaviors when teachers design opportunities based on goals and objectives that direct students toward achievement of flow. Some suggestions for teachers include (a) providing the goals of the lesson to students, (b) pacing activities according to student skill level, and (c) providing verbal or non-verbal feedback to students based on their progress and performance.

Since the state of flow is experienced when a person interacts with the appropriate conditions in any environment (Nakamura, 2014), teachers should be encouraged to create learning environments that promote emergent motivation among their students. In the present study, students reported slightly higher flow scores in the middle portion of class and teachers achieved slightly greater flow scores toward the end of class. This may imply that while teacher and student flow scores did not always converge on a consistent basis, both group piano teachers and students still experienced positive emergent motivation.

Strengths and Limitations

All participating group piano teachers committed to the full research period and completed the Group Piano Teacher Questionnaire and all of the Group Piano Teacher Experience Sampling Forms (*GPTESF*s). The majority of the student participants who volunteered to participate also continued with the study until the final day. In addition, the Experience Sampling Method Orientation Session was beneficial to the participants and the researcher. This orientation session allowed the (a) teachers to ensure they were following appropriate procedures, (b) students to learn how to complete the Experience

Sampling Forms with their teacher, and (c) researcher to respond to any questions related to the study. Moreover, the results from the participant background questionnaires provided valuable information that better characterized the participants in each classroom. As the first Experience Sampling Method study conducted in a collegiate group piano classroom, this research has helped to develop appropriate procedures to conduct future research on flow experiences in other group piano classrooms.

There were several limitations to this study. First, the nature of the study did produce slight distractions in class. The three signals within a class period distracted some teachers more than others. This may have prevented teachers from completing the *GPTESF*s in a thoughtful manner. There were a few students who needed to stop participation after the first or second day due to an inability to remain focused in class. In addition, ESL (English as Second Language) students may have had difficulty reading, comprehending, and completing the *PSESF*s in the required time frame. Second, the sample size for this study was small with only three group piano classrooms observed. Therefore, results could not be generalized to the population. However, previous researchers have indicated data collected using the Experience Sampling Method can provide insightful results even with a small sample (Hektner, Schmidt, & Csikszentmihalyi, 2007).

Another limitation involved the inconsistent length of class time and the number of class days per week among the three colleges due to different summer session schedule. For example, two classes met four times per week, while one class met three times per week at a longer length per class period. Conducting the research during the

fall and spring semesters of the academic year when all classes meet for a consistent length of time (e.g., twice a week for 50 minutes each class period) may produce different results.

A final limitation involved the mixed population among the three group piano classes (i.e., music majors studying alongside hobby students). Replicating the study with a clearly leveled and delineated population may generate different results. For example, music majors, who have prior music experience and different goals, are often delineated according to musical ability and put in separate classes from hobby students.

Recommendations

This is the first research study to examine student and teacher flow in the collegiate piano classroom. As such, this study has opened new doors to future research. For instance, this study has demonstrated a procedure to conduct the Experience Sampling Method in collegiate group piano classrooms. It is highly recommended that during the orientation session, the researcher thoroughly review the nine flow dimension statements to ensure participants understand the meaning of each statements (i.e., "I was challenged but I believe my skills would allow me to meet the challenge." and "I did things spontaneously and automatically without having to think."). Providing hypothetical examples for each of these statements would be helpful.

It is recommended the present study be replicated with a larger sample to determine if the selected student predictor variables (i.e., school level, major, prior musical experience, and frequency of practice) and teacher predictor variables (i.e.,

degree level, class size, and lesson plan) could potentially become significant predictors of student flow in the piano classroom.

It is also recommended that future studies collect data during fall and spring academic sessions. In the current study, the summer classes met three to four days a week over the course of five or six weeks, which is a relatively short duration. During a typical fall or spring semester, the curriculum would be taught over a 14 to 16-week period in which classes would meet once or twice a week. Additionally, future research should also be conducted with classes of similar time lengths and meeting periods (e.g., all classes meet twice a week for a 50 minutes each class period).

It is recommended that future research examine leveled classes of music majors and leveled classes of hobby students, as both groups have diverse goals and musical backgrounds. Consequently, examining the two populations separately may produce different and more specific results. While mixed populations may be typical in community colleges and smaller universities, separating music major and non-music major group piano courses is standard practice across the United States.

It is suggested that further research could also include follow-up interviews with teachers and several students from each classroom to further clarify the statistical results from the (a) student *PSESF*, (b) teacher *GPTESF*, and (c) background questionnaires. Also, when replicating this study, researchers may want to consider eliminating the item on the ESF that is related to perceived level of observation (i.e., perceived level of student observation). Given that students in the group piano classroom are typically observing the music score and keyboard rather than directly observing the teacher, this item may not be a valid indicator of student attentiveness.

Finally, future research conducted in the group piano classroom could involve the inclusion of additional factors such as (a) floor plan or set up of the classroom in terms of teacher and student keyboards, (b) technology availability and usage, (c) the behavior of other students in class (Rybak, 1996/1997), and (d) specific keyboard activities (e.g., sight reading, technique, repertoire, transposition, harmonization, and improvisation) to improve understanding of how the additional factors may also influence flow experiences.

Conclusion

The findings from this study contribute to the existing literature by providing new insight on the application of the Experience Sampling Method in the collegiate group piano classroom from both the teacher and student perspectives. This study supports the need for group piano instructors to understand the conditions and interactions between students and teachers necessary to create positive piano learning environments. It is hoped this study will serve as a stepping-stone toward achieving the goal of characterizing the conditions conducive to flow achievement in the collegiate group piano classroom and facilitate increased quality of teaching and learning experiences for both students and teachers.

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APPENDIX 1
BEGINNING PIANO I: PIANO STUDENT QUESTIONNAIRE

Beginning Piano I: Piano *Student* Questionnaire

Participant ID: Date:

1. *Are you over the age of 18?*
☐ YES ☐ NO

2. *What is your education status?* (check all that apply)
☐ High School student
☐ Community College student
☐ Four-year University student
☐ Other, please specify:_____

3. *If you are a college student, are you a music major?*
☐ Not applicable ☐ NO, I am not a music major. ☐ YES, I am a music major.

4. *Have you taken piano lessons prior to this course?* (check one)
☐ NO, I have not taken piano lessons prior to this course.
☐ YES, I have taken piano lessons prior to this course. How many years? _____years

5. *Do you play another instrument besides piano?* (check one)
☐ NO, I do not play another instrument besides piano.
☐ YES, I do play another instrument. Please specify instrument(s): _____
How many years? _____years

6. *Have you participated in other music-related activities (i.e. choir, band, orchestra, informal music groups, church ensemble, other music classes, etc.)?* (check one)
☐ NO, this is my first music class.
☐ YES, I have participated in other music-related classes and activities.
Specify which musical activities: _____How many years? _____year

7. *What is your main reason for enrolling in beginning class piano?* (check ALL that apply)
☐ I have always wanted to learn to play the piano.
☐ I need to take this course to fulfill a degree requirement.
☐ I am taking this course for an easy "A" on the transcript.
☐ Other reasons, please explain:_____

8. *On average, how many days do you practice piano outside of class every week?* (check one)
☐ 0 days ☐ 1 day ☐ 2 days ☐ 3 days ☐ 4 days ☐ 5 days ☐ 6 days ☐ 7 days

9. *On average, how much time do you spend at the piano during each practice session?* (check one)
☐ 0 – 15 min. ☐ 15-30 min. ☐ 30 – 45 min. ☐ 45 – 60 min. ☐ More than 60 min.

APPENDIX 2
GROUP PIANO TEACHER QUESTIONNAIRE

Group Piano *Teacher* Questionnaire

Participant ID: Date:

1. *What is your highest degree obtained?* (check one)
- ☐ Bachelors
- ☐ Masters
- ☐ Doctorate
- ☐ Other, please specify:_____

2. *Please indicate your major for each obtained degree* (check all that apply):
- ☐ Bachelors (specify major): _____
- ☐ Masters (specify major): _____
- ☐ Doctorate (specify major): _____
- ☐ Other, please specify:_____

3. *How many years have you been teaching piano (in general)?*

_____years

4. How many years have you been teaching college group piano?

_____years

5. *How many students are currently enrolled in this section of piano class?*

_____students

6. *What is your faculty status at this college?*
- ☐ Adjunct
- ☐ Full-time
- ☐ Not applicable, please explain:

7. *How often do you create lesson plans for this group piano class?*
- ☐ Never
- ☐ Rarely (1-2 times per semester)
- ☐ Sometimes (3 – 8 times per semester)
- ☐ Frequently (between 9 – 13 times per semester)
- ☐ Always (every class)

APPENDIX 3
BEGINNING PIANO I: PIANO STUDENT EXPERIENCE SAMPLING FORM
(*PSESF*)

Beginning Piano I: *Piano Student*
Experience Sampling Form **SIGNAL #_____**

Participant ID: **Approximate Time: __ : ___ PM / AM (circle)** Date:

WHEN THE SIGNAL WENT OFF:

1. ***What was the main instructional activity?*** (check one)
☐ Teacher-led group instruction ☐ One-on-one instruction with teacher ☐ Self practice session
☐ Practice session in groups (2 or more) ☐ Group performance ☐ Individual student performance

2. ***The pacing of the instructional activity was just right.*** (check one)
☐ Strong Disagree ☐ Disagree ☐ Neither Agree or Disagree ☐ Agree ☐ Strongly Agree

3. ***The teacher was observing us carefully.*** (check one)
☐ Strong Disagree ☐ Disagree ☐ Neither Agree or Disagree ☐ Agree ☐ Strongly Agree

4. ***The teacher seemed to be enjoying what he/she was doing:*** (check one)
☐ Strong Disagree ☐ Disagree ☐ Neither Agree or Disagree ☐ Agree ☐ Strongly Agree

---

1	2	3	4	5
Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree

5. ***I was challenged, but I believe my skills would allow me to meet the challenge.*** (circle one)
1 2 3 4 5

6. ***I knew what I wanted to achieve at the moment.*** (circle one)
1 2 3 4 5

7. ***I had a good idea about how well I was doing.*** (circle one)
1 2 3 4 5

8. ***I was completely focused on the task at hand.*** (circle one)
1 2 3 4 5

9. ***I felt in total control of what I was doing.*** (circle one)
1 2 3 4 5

10. ***I was not concerned with what others may have been thinking of me.*** (circle one)
1 2 3 4 5

11. ***Time seemed to alter (either slowed down or speeded up)***. (circle one)
1 2 3 4 5

12. ***I did things spontaneously and automatically without having to think.*** (circle one)
1 2 3 4 5

13. ***I loved the feeling of what I was doing and want to capture it again.*** (circle one)
1 2 3 4 5

APPENDIX 4
FLOW STATE SCALE (FSS)

Flow State Scale

Please answer the following questions in relations to your experience in the event you have just completed. These questions relate to the thoughts and feelings you may have experienced during the event. There are no right or wrong answers. Think about how you felt during the event and answer the questions using the rating scale below. Circle the number that best matches your experience from the options to the right of each question.

Rating Scale:

Strongly disagree 1	Disagree 2	Neither agree nor disagree 3	Agree 4	Strongly agree 5

1. I was challenged, but I believe my skills would allow me to meet the challenge.	1	2	3	4	5
2. I made the correct movements without thinking about trying to do so.	1	2	3	4	5
3. I knew clearly what I wanted to do.	1	2	3	4	5
4. It was really clear to me that I was doing well.	1	2	3	4	5
5. My attention was focused entirely on what I was doing.	1	2	3	4	5
6. I felt in total control of what I was doing.	1	2	3	4	5
7. I was not concerned with what others may have been thinking of me.	1	2	3	4	5
8. Time seemed to alter (either slowed down or speeded up).	1	2	3	4	5
9. I really enjoyed the experience.	1	2	3	4	5
10. My abilities matched the high challenge of the situation.	1	2	3	4	5
11. Things just seemed to be happening automatically.	1	2	3	4	5
12. I had a strong sense of what I wanted to do.	1	2	3	4	5
13. I was aware of how well I was performing.	1	2	3	4	5
14. It was no effort to keep my mind on what was happening.	1	2	3	4	5
15. I felt like I could control what I was doing.	1	2	3	4	5
16. I was not worried about my performance during the event.	1	2	3	4	5

17. The way time passed seemed to be different from normal.	1	2	3	4	5
18. I loved the feeling of that performance and want to capture it again.	1	2	3	4	5
19. I felt I was competent enough to meet the high demands of the situation.	1	2	3	4	5
20. I performed automatically.	1	2	3	4	5
21. I knew what I wanted to achieve.	1	2	3	4	5
22. I had a good idea while I was performing about how well I was doing.	1	2	3	4	5
23. I had total concentration.	1	2	3	4	5
24. I had a feeling of total control	1	2	3	4	5
25. I was not concerned with how I was presenting myself.	1	2	3	4	5
26. I felt like time stopped while I was performing.	1	2	3	4	5
27. I experience left me feeling great.	1	2	3	4	5
28. The challenges and my skills were at an equally high level.	1	2	3	4	5
29. I did things spontaneously and automatically without having to think.	1	2	3	4	5
30. My goals were clearly defined.	1	2	3	4	5
31. I could tell by the way I was performing how well I was doing.	1	2	3	4	5
32. I was completely focused on the task at hand.	1	2	3	4	5
33. I felt in total control of my body.	1	2	3	4	5
34. I was not worried about what others may have been thinking of me.	1	2	3	4	5
35. At times, it almost seemed like things were happening in slow motion.	1	2	3	4	5
36. I found the experience extremely rewarding.	1	2	3	4	5

(Note from the authors)
The Flow State Scale may be used for research purposes without any prior written consent as long as appropriate recognition is given, but the author would appreciate being sent copies of resulting publications.

Jackson, S. and Marsh, H. (1996)

APPENDIX 5
GROUP PIANO TEACHER EXPERIENCE SAMPLING FORM (*GPTESF*)

Group Piano Teacher
Experience Sampling Form **SIGNAL #_____**

Participant ID: **Approximate Time: ____ : _____ PM / AM (circle)** Date:

WHEN THE SIGNAL WENT OFF:

1. ***What was the main instructional format of the class?*** (check one)
☐ Teacher-led group instruction ☐ One-on-one instruction ☐ Individual practice session
☐ Practice session in groups (2 or more) ☐ Group performance ☐ Individual student performance

2. ***The pacing of the instructional activity was just right.*** (check one)
☐ Strong Disagree ☐ Disagree ☐ Neither Agree or Disagree ☐ Agree ☐ Strongly Agree

3. ***The students were observing my instructions carefully.*** (check one)
☐ Strong Disagree ☐ Disagree ☐ Neither Agree or Disagree ☐ Agree ☐ Strongly Agree

4. ***Students seemed to be engaged and learning.*** (check one)
☐ Strong Disagree ☐ Disagree ☐ Neither Agree or Disagree ☐ Agree ☐ Strongly Agree

---

1 Strongly Disagree | 2 Disagree | 3 Neither Agree or Disagree | 4 Agree | 5 Strongly Agree

5. ***I was challenged, but I believe my skills would allow me to meet the challenge.*** (circle one)
1 2 3 4 5

6. ***I knew what I wanted to achieve at the moment.*** (circle one)
1 2 3 4 5

7. ***I had a good idea about how well I was doing.*** (circle one)
1 2 3 4 5

8. ***I was completely focused on the task at hand.*** (circle one)
1 2 3 4 5

9. ***I felt in total control of what I was doing.*** (circle one)
1 2 3 4 5

10. ***I was not concerned with what others may have been thinking of me.*** (circle one)
1 2 3 4 5

11. ***Time seemed to alter (either slowed down or speeded up)***. (circle one)
1 2 3 4 5

12. ***I did things spontaneously and automatically without having to think.*** (circle one)
1 2 3 4 5

13. ***I loved the feeling of what I was doing and want to capture it again.*** (circle one)
1 2 3 4 5

APPENDIX 6
INSTITUTIONAL REVIEW BOARD APPROVAL

The UNIVERSITY of OKLAHOMA

Institutional Review Board for the Protection of Human Subjects

Approval of Initial Submission – Expedited Review – AP01

Date: May 15, 2015

IRB#: 5534

Principal Investigator: Cindy H Tseng, Ph.D

Approval Date: 05/14/2015

Expiration Date: 04/30/2016

Study Title: An investigation of student and teacher flow experiences in the collegiate group piano classroom

Expedited Category: 7

Collection/Use of PHI: No

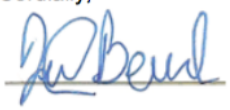
On behalf of the Institutional Review Board (IRB), I have reviewed and granted expedited approval of the above-referenced research study. To view the documents approved for this submission, open this study from the *My Studies* option, go to *Submission History*, go to *Completed Submissions* tab and then click the *Details* icon.

As principal investigator of this research study, you are responsible to:

- Conduct the research study in a manner consistent with the requirements of the IRB and federal regulations 45 CFR 46.
- Obtain informed consent and research privacy authorization using the currently approved, stamped forms and retain all original, signed forms, if applicable.
- Request approval from the IRB prior to implementing any/all modifications.
- Promptly report to the IRB any harm experienced by a participant that is both unanticipated and related per IRB policy.
- Maintain accurate and complete study records for evaluation by the HRPP Quality Improvement Program and, if applicable, inspection by regulatory agencies and/or the study sponsor.
- Promptly submit continuing review documents to the IRB upon notification approximately 60 days prior to the expiration date indicated above.
- Submit a final closure report at the completion of the project.

If you have questions about this notification or using iRIS, contact the IRB @ 405-325-8110 or irb@ou.edu.

Cordially,



Fred Beard, Ph.D.
Vice Chair, Institutional Review Board

APPENDIX 7
INVITATION LETTER TO TEACHERS AND STUDENTS

Dear Faculty member:

You have been invited to participate in a research project being conducted for my dissertation at the University of Oklahoma. The study, entitled "An Investigation of Student and Teacher Flow Experiences in the Collegiate Group Piano Classroom", is designed to determine if certain variables in the piano classroom environment predict or relate to the quality of learning and teaching experiences. You were selected to participate because you are currently teaching a Beginning Piano I course at _____. Your participation could potentially benefit music instructors by helping provide a better understanding of conditions that could increase the quality of learning and teaching experience for both music students and educators.

Participation on the study will require you to complete one background questionnaire, and a total of 12 experience surveys throughout four class sessions (with the first class session being an orientation session; during the orientation both students and teacher will complete 3 example experience survey forms). During each class period, the researcher will provide a device that emits three alarm signals randomly within each class period. When signaled, you and your students will take a brief moment to complete a short experience survey at the same time, in which each survey should take no more than two minutes. During the orientation, I will brief you on how the study will be conducted so you will know how to respond to the signals during class (experience surveys collected during orientation are discarded). During the actual research sessions (other four class sessions), I will be present to pass out and collect the experience survey booklets before and after class, but I will not be in the classroom during instruction.

Your participation in this study is completely voluntary, and you may withdraw at any time without any obligation to the researcher. Due to the nature of the research purpose, there will be slight interruptions during class to fill out the short experience survey. All the information collected will remain anonymous, and your answers will be completely confidential. We anticipate no risks from participating, and your decision to participate will not affect your relationship with the researcher, the University of Oklahoma, or *(the community college name)*.

If you have any questions or concerns about this study, please contact me, Cindy Tseng (cindytseng@ou.edu, 310-720-6888), or my dissertation co-chairs Dr. Charles Ciorba (cciorba@ou.edu) and Dr. Barbara Fast (bfast@ou.edu), or the University of Oklahoma – Norman Campus Institutional Review Board at 405-32508110 or irb@ou.edu.

Thank you for considering this request to participate. If you are interested and support this study, please contact me at email: cindytseng@ou.edu, or cell phone: (310) 720–6888.

Respectfully,
Cindy Tseng
Principle Investigator
(310) 720 – 6888

The University of Oklahoma is an equal opportunity institution.



IRB NUMBER: 5534
IRB APPROVAL DATE: 05/14/2015

Dear Student:

You have been invited to participate in a research project being conducted for my dissertation at the University of Oklahoma. You were selected to participate because you are currently enrolled in a Beginning Piano I course at _____, and you are over the age of 18. The study, entitled "An Investigation of Student and Teacher Flow Experiences in the Collegiate Group Piano Classroom", is designed to determine if certain variables in the piano classroom environment predict or relate to the quality of learning and teaching experiences. Your participation could potentially benefit music instructors by helping provide a better understanding of conditions that could increase the quality of learning and teaching experience for both music students and educators.

Participation on the study will require you to complete one background questionnaire, and a total of 12 experience surveys throughout four class sessions (with the first class session being an orientation session; during the orientation both students and teacher will complete 3 example experience survey forms). During each class period, three signals will alarm randomly. When signaled, you and your teacher will take a brief moment to complete a short experience survey at the same time, in which each survey should take no more than two minutes. During the orientation, I will brief you on how the study will be conducted so you will know how to respond to the signals during class (experience surveys collected during orientation are discarded). During the actual research sessions (other four class sessions), I will be present to pass out and collect the experience survey booklets before and after class, but I will not be in the classroom during instruction.

You must be over the age of 18 to participate. Your participation in this study is completely voluntary, and you may withdraw at any time without any obligation to the researcher or your piano instructor. Due to the nature of the research purpose, there will be slight interruptions during class to fill out the short experience survey. All the information collected will remain anonymous, and your answers will be completely confidential. We anticipate no risks from participating, and your decision to participate will not affect your relationship with your teacher, the researcher, the University of Oklahoma, or *(the community college name)*.

If you have any questions or concerns about this study, please contact me, Cindy Tseng (cindytseng@ou.edu, 310-720-6888), or my dissertation co-chairs Dr. Charles Ciorba (cciorba@ou.edu) and Dr. Barbara Fast (bfast@ou.edu), or the University of Oklahoma – Norman Campus Institutional Review Board at 405-32508110 or irb@ou.edu.

Thank you for considering this request to participate.

Respectfully,
Cindy Tseng
Principle Investigator
(310) 720 – 6888

The University of Oklahoma is an equal opportunity institution.



IRB NUMBER: 5534
IRB APPROVAL DATE: 05/14/2015

APPENDIX 8
INFORMED CONSENT FORM FOR TEACHERS AND STUDENTS

Signed Consent to Participate in Research

I am Cindy Tseng from the Music Department at the University of Oklahoma and I invite you to participate in my research project entitled *An investigation of Student and Teacher Flow Experiences in the Collegiate Group Piano Classroom.* This research is being conducted at_____. You were selected as a possible participant because you are an instructor of the Beginning Piano I course.

Please read this document and contact me to ask any questions that you may have BEFORE agreeing to take part in my research.

The purpose of this research is to investigate the quality of teaching and learning experiences of group piano teachers and students in the collegiate group piano classroom.

About 100 people will take part in this research including up to 6 group piano instructors and 94 piano students over the age of 18.

If you agree to be in this research, you and your students will each complete 1 background questionnaire and a total of 12 experience surveys throughout 4 class sessions (with an additional first class session being an orientation session; during the orientation both students and teacher will complete 3 example experience survey forms during regular class instruction). During each class session, three signals will alarm randomly and the teacher and students will stop what they are doing for a brief moment to complete the experience survey at the same time. During the orientation, the researcher will brief the classroom participants on how the study will be conducted so the participants know how to respond to the signals during class (the three example experience surveys collected during orientation are discarded). During the actual research sessions (other four class sessions), the researcher will be present only to pass out and collect experience survey booklets before and after class; the researcher will not be in the classroom during instruction.

Your participation will take place over the course of 4 class periods (with an additional first class session being an orientation session). You will complete 3 experience surveys during each class period (the surveys completed during orientation are discarded). Each experience survey will take no more than 2 minute to complete. The 1 background questionnaire will take no more than 5 minutes to complete.

There are no risks and no benefits from being in this research.

You will not be reimbursed for your time and participation in this research.

In research reports, there will be no information that will make it possible to identify you. Research records will be stored securely and only approved researchers and the OU Institution Review Board will have access to the records.



IRB NUMBER: 5534
IRB APPROVAL DATE: 05/14/2015
IRB EXPIRATION DATE: 4/30/2016

You have the right to access the research data that has been collected about you as a part of this research. However, you may not have access to this information until the entire research has completely finished and you consent to this temporary restriction.

If you do not participate, you will not be penalized or lose benefits or services unrelated to the research. If you decide to participate, you don't have to answer any question and can stop participating at any time.

Your name will not be retained or linked with your responses. The data you provide will be retained in anonymous form.

If you have questions, concerns or complaints about the research or have experienced a research-related injury, contact me at cell: (310) 720 – 6888, or office: (310) 233-4414, or email: tsengch@lahc.edu. You may also contact my dissertation co-chairs, via email, Dr. Charles Ciorba: cciorba@ou.edu, and Dr. Barbara Fast: bfast@ou.edu.

You can also contact the University of Oklahoma – Norman Campus Institutional Review Board (OU-NC IRB) at 405-325-8110 or irb@ou.edu if you have questions about your rights as a research participant, concerns, or complaints about the research and wish to talk to someone other than the researcher(s) or if you cannot reach the researcher(s).

You will be given a copy of this document for your records. By providing information to the researcher(s), I am agreeing to participate in this research.

Participant Signature	Print Name	Date
Signature of Researcher Obtaining Consent	Cindy Tseng Print Name	Date
Signature of Witness (if applicable)	Print Name	Date

IRB NUMBER: 5534
IRB APPROVAL DATE: 05/14/2015
IRB EXPIRATION DATE: 4/30/2016

Signed Consent to Participate in Research

I am Cindy Tseng from the Music Department at the University of Oklahoma and I invite you to participate in my research project entitled *An investigation of Student and Teacher Flow Experiences in the Collegiate Group Piano Classroom.* This research is being conducted at _____. You were selected as a possible participant because you are a student over the age of 18 enrolled in the Beginning Piano I course.

Please read this document and contact me to ask any questions that you may have BEFORE agreeing to take part in my research.

The purpose of this research is to investigate the quality of teaching and learning experiences of group piano teachers and students in the collegiate group piano classroom.

About 100 people will take part in this research including up to 6 group piano instructors and 94 piano students over the age of 18.

If you agree to be in this research, you and your teacher will each complete 1 background questionnaire and a total of 12 experience surveys throughout 4 class sessions (with an additional first class session being an orientation session; during the orientation both students and teacher will complete 3 example experience survey forms during regular class instruction). During each class session, three signals will alarm randomly and the teacher and students will stop what they are doing for a brief moment to complete the experience survey at the same time. During the orientation, the researcher will brief the classroom participants on how the study will be conducted so the participants know how to respond to the signals during class (the three example experience surveys collected during orientation are discarded). During the actual research sessions (other four class sessions), the researcher will be present only to pass out and collect experience survey booklets before and after class; the researcher will not be in the classroom during instruction.

Your participation will take place over the course of 4 class periods (with an additional first class session being an orientation session). You will complete 3 experience surveys during each class period (the surveys completed during orientation are discarded). Each experience survey will take no more than 2 minute to complete. The 1 background questionnaire will take no more than 5 minutes to complete.

There are no risks and no benefits from being in this research.

You will not be reimbursed for your time and participation in this research.

In research reports, there will be no information that will make it possible to identify you. Research records will be stored securely and only approved researchers and the OU Institution Review Board will have access to the records.



IRB NUMBER: 5534
IRB APPROVAL DATE: 05/14/2015
IRB EXPIRATION DATE: 4/30/2016

You have the right to access the research data that has been collected about you as a part of this research. However, you may not have access to this information until the entire research has completely finished and you consent to this temporary restriction.

If you do not participate, you will not be penalized or lose benefits or services unrelated to the research. If you decide to participate, you don't have to answer any question and can stop participating at any time.

Your name will not be retained or linked with your responses. The data you provide will be retained in anonymous form.

If you have questions, concerns or complaints about the research or have experienced a research-related injury, contact me at cell: (310) 720 – 6888, or office: (310) 233-4414, or email: tsengch@lahc.edu. You may also contact my dissertation co-chairs, via email, Dr. Charles Ciorba: cciorba@ou.edu, and Dr. Barbara Fast: bfast@ou.edu.

You can also contact the University of Oklahoma – Norman Campus Institutional Review Board (OU-NC IRB) at 405-325-8110 or irb@ou.edu if you have questions about your rights as a research participant, concerns, or complaints about the research and wish to talk to someone other than the researcher(s) or if you cannot reach the researcher(s).

You will be given a copy of this document for your records. By providing information to the researcher(s), I am agreeing to participate in this research.

Participant Signature	Print Name	Date
Signature of Researcher Obtaining Consent	Cindy Tseng Print Name	Date
Signature of Witness (if applicable)	Print Name	Date

IRB NUMBER: 5534
IRB APPROVAL DATE: 05/14/2015
IRB EXPIRATION DATE: 4/30/2016

APPENDIX 9
EXPERIENCE SAMPLING METHOD ORIENTATION SESSION SCRIPT

Experience Sampling Method Orientation Session

Hi, I am Cindy Tseng. I am a visiting doctoral student working on a final research project before I can graduate. First of all, thank you Professor_____ for letting me use this class to collect some survey data for my final project. And thank you – the students in this class – who are over the age of 18 and are willing to participate in this study.

I am going to be passing out an Orientation packet, and as I pass this out, I will go ahead and talk about the study. The purpose of the study is to explore the learning and teaching experiences of the students and the teacher at the same time, in the moment of learning and teaching. I am hoping the results will help music educators better understand the quality of learning and teaching experiences in the classroom. The nature of the study is to take three snapshots of your experience throughout each class period.

Please turn to the last three pages of the packet. Three alarms will signal from this iPod. Each time the alarm goes off from this iPod, your teacher will turn it off and let you know when to fill it out with her. It will be immediately or soon after the signal. Each survey should take not longer than 1-2 min. It should be quick and once you're done, just return to what you were doing.

This study will only take place for the next four classes. I will be out of the room during class instruction so it'll feel like a regular class session. I will just be here at the beginning and end of class, to pass out and to collect the surveys. Today there will be three practice signals for those of you who will be participating in the study to get an idea the signals and filling out the surveys. So before, I leave the room, let me quickly go over the Consent form.

First of all, based on school policy, you must be at least 18 years old to participate. If you are not over the age of 18, you can just return the blank packet to me at the end of class. For those of you who are over the age of 18, and are willing to participate in this project, can you turn to page 2 and sign and date at the bottom? Even after signing the consent form, you may stop your participation at any point during the study. There are no positive or negative benefits from this study. Also, this study will not impact your grade in any way. Your responses will remain anonymous. Your teacher will not be able to review these responses just like how you will not be able to review his or her responses. This is just data for my final project. I will make a copy of the informed consent form for your own records next class.

Turn to page 4. This is the first Experience Sampling Form. You will see that you are given a participant number. Only you have this number. Can you write it down somewhere? This way you will know which packet to pick up at the next class.

Turn to page 5. This is a short questionnaire. Go ahead and fill it out now or at the end of class before you leave today. Today's survey session is just for practice, so I'm going to be in the back of the room today just in case there are any questions. But I don't anticipate any issues and class should proceed as normal. Thank you for your time.